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Saturday, October 20, 1849.

Iron Ores and the Iron Manufacture of the United States.

Continued from page 640.

NEW YORK

ST. LAWRENCE DISTRICT.

Parallel with the St. Lawrence river, and a few miles to the southeast of it, is the line of junction of the lowest member of the secondary formation, viz., the Potsdam sand stone—with that great body of primary rocks, which constitute the Alpine region between the St. Lawrence and Lake Champlain. The position of the strip of territory along this line is particularly favorable for the development of masses of ores and metallic veins. Here are found belts of rock of unusual occurrence within either of the two great formations at a distance from the other.—Such are serpentine particularly, and gneiss rock and beds of primary limestone. With these are large bodies of *specular iron*, lying generally not in the form of veins, but in irregular shaped collections of uncertain extent. The ore also occurs interstratified with the gneiss and with the Potsdam sandstone; and these rocks are again so highly charged with it, as to constitute that form of repository, called a *stockwerk*. It appears however, that it is only the large bodies found in the gneiss and serpentine, that can be relied upon for long continued supplies.—The serpentine itself seems frequently to be mingled with the other rocks forming breccias, of serpentine and quartz among the beds of specular iron.*

In nearly all these particulars, as well as in the character of the ore itself, there is a striking resemblance to the iron mines of the Island of Elba. This Island celebrated from the remotest periods for its iron ores, comprises two very distinct groups of formations. Monte Campana, the centre of the western portion is a conical group of mountains almost entirely composed of feldspar rocks,† which have broken through and flowed over the sedimentary formations. These rocks are remarkable for presenting all the varieties of the feldspar rocks. Most frequently they are in the state of quartz porphyries, but often they assume the granite texture, and sometimes that of trachyte.

"The metalliferous formations of the Island of Elba are found concentrated with the serpentine in the eastern part of the Island. The sedimentary rocks are altogether metamorphic, but the metamorphism is of a peculiar character, remarkable for the abundance of the gabbro-rosso (a rock composed of serpentine minerals) and for the mixtures of the different rocks with the ingredients of the serpentines, constituting marbles resembling the Campan marbles of the Pyrenees, and argillaceous jaspers, green or red, with a glandular structure. This geographical proximity of the serpentines and metalliferous deposits is the result also of a still more decided agreement in their mode of occurrence. The bed of specular iron near Rio lies among the strata of slates, which rest against the flanks of the mountains of Ste. Catharine. Now all this group is composed of masses of serpentine, and this large bed of ore ought to be regarded as a true "gite de contact" (a part of the same geological formation). Its crystalized structure, its burying itself in the different metamorphic beds of the rocks including it, suggest the idea of metalliferous sublimations carried through these beds: the study of the details proves that these sublimations have taken place under the influence of considerable heat and pressure."‡

The mass of magnetic ore and hematite of Mount Calamita on the same Island is seen enfolded in an arch of limestones and crystalline slates, 100 yards in height. The limestones in contact with the ores are converted into saccharoidal dolomites, and are otherwise altered, as is often seen when they are in contact with trap rocks. So that the author above quoted remarks that it is impossible to doubt that the iron ores have been in fact the uplifting rocks, and that the numerous evidences of metamorphism in the stratified rocks are equally the effects of their eruption.

The accompanying section represents the position of two of the principal bodies of specular ore in the town of Gouverneur in this district. It is taken from Professor Emmon's report. On the left is a hill of Potsdam sandstone, the strata dipping towards the south; in the next hill is the *Parish ore bed*, capped by the same sandstone; beyond it to the north is the *Kearney bed*, and next to this a hill of sandstone, the rock dipping north; or, as Professor Emmons observes—"thrown off in opposite directions from the masses of ore. An arrangement of this kind clearly indicates the nature and causes of changes at this place, which appear to have resulted from an uplift or an outburst of the ore in connection with the serpentine beneath it. That the serpentine and the specular oxide were the rocks, which created this disturbance in the position of the sandstone seems highly probable from the fact, that no igneous rocks as trap or green stone appear in the vicinity."

Specular iron is one of the purest forms, in which the ores of this metal are found. When free from foreign matters it consists of 70 per cent. iron and 30 per cent. oxygen, being a pure per-oxide of iron. It occurs in crystaline masses of about the hardness of quartz, with bright metallic lustre like polished steel. When scratched or ground it gives a red powder. This red powder is the most distinctive mark of the ore, and the absence of any considerable mixture of the protoxide of iron may be inferred from its almost entire want of magnetism.—It is also found in an earthy state derived from the

* Professor Emmons, state geological report page 96.

† In a description of some localities in St. Lawrence and Jefferson counties, published in Silliman's Journal, vol., XXV p. 348, the authors describe the granite about Gouverneur "as consisting almost entirely of feldspar. It contains very little quartz and not a particle of mica." This vicinity is famous for its fine crystals of feldspar.

‡ Geologie Appliquee; A Burat, page 138.

a, a, Sandstone; *b*, Gneiss; *c*, Serpentine; *d*, Adit in the Parish Bed; *e*, Excavation at the Kearney Bed; *f, f*, Ore.

disintegration of the red stony ore—another frequent mode of its occurrence. Such is a great portion of the ore in the two beds above named. The red stony ore is more or less mixed with quartz gangue, and on its surface and lining its cavities are fine lenticular crystals of the specular oxide associated with well formed crystals of calcareous spar in six sided prisms with summits of three planes.

The principal mines of this ore in St. Lawrence county are the *Parish and Kearney beds*, represented in the above figure, and the *Tate and Polly beds* in Hermon. In Jefferson county, near St. Lawrence county, are several localities in the vicinity of Theresa Falls, of which the *Shirtleff bed* appears to be the principal one. There are besides the *Sterling vein*, and others of less importance. These closely resemble each other in geological position, and appear to be all limited in their supplies of ore: but the accounts of them that are published, are not very precise in this respect. According to Professor Emmons the Parish and Kearney beds are about 40 rods apart. The former appears to lie nearly horizontally in the serpentine and gneiss. It covers a wide area; and again, it formerly formed a hill in a small valley 50 or 60 feet high, and in circumference 25 or 30 rods; but that it extends only 8 or 10 feet in depth when the serpentine beneath is reached—p. p. 93 and 341. In another place the same author remarks. "The Parish and Kearney and the Tate and Polley beds are large and important and capable of supplying ore to any amount. The Parish and Kearney beds in reality belong to one mass; and the indications in that neighborhood show that the beds may be opened at several different places in addition to those from which the ore is now raised."

Dr. Beck in his report describes them as 4½ miles southwest from the village of Gouverneur, as "not more than 80 or 100 rods distant from each other, and are undoubtedly parts of one vast deposit, which has been traced at least a mile in a northern and southern direction. * * * The deposit of ore seems to be a bed resting on the primitive rock, and overlaid by the oldest of the sandstones.

The specimens from the Kearney beds present several varieties, such as the slaty, like the micaceous ore; hard and compact; jaspery and semicrystaline; the blades although small having the high lustre of the Elba ore. The powder of all these has a bright red color, and soils the fingers like red paint. Associated with the ore are crystals of brown spar, carbonate of iron, calcareous spar in dodecahedral crystals, and rarely sulphate of barytes. * * *

The most abundant ore, however, is that which has a brownish red color, compact texture, and a dull earthy aspect. The specific gravity of an average specimen of this is 4·855, and the following is its composition, viz:

Peroxide of iron	96·52
Silica, Alumina, etc.	3·48"

The following account is by J. Finch, Esq., published in the XIX vol. of Silliman's Journal for the year 1831.

"The mine, from which the iron works of Rossie were supplied with ore, is situated one mile south of the road between Antwerp and Gouverneur, at a distance of seven miles southwest from the latter village. The following minerals may be obtained.

1. Red iron froth. This occurs massive, but usually forms a coating to the other varieties of ore.—It has sometimes been mixed with oil and used as a paint; it has then a purple tint, very pleasing to the eye. At Rossie it has been applied to some buildings and the color is very durable. This species of iron ore stains very strongly. The sheep of the vicinity are partial to lying in the mine, and their fleece becomes stained of a deep red. It is said to be difficult to free their wool from this color. They exhibit the singular appearance of a flock of red sheep. A man, who was formerly employed in the mine, said that the clothes of the workmen were dyed in a similar way.*

2. Micaceous specular iron; called black lead by the miners. In thin layers sometimes lining small cavities. It is composed of thin laminae, or scales of shining metallic lustre; color bluish black.

3. Compact protoxide of iron." (magnetic oxide?)

"4. Red oxide of iron.

5. Spathose iron ore, in small quantities.

6. Iron flint or Eisen Kiesel; of a dull red color; excessively hard. Mixed with the other varieties of ore; sometimes so abundant as to cause great labor to the miners. It requires to be carefully separated.

7. Sulphuret of iron, disseminated in some parts of the rock, which then becomes of a dark yellowish brown color. Water passing over it decomposes the pyrites, and there is formed,

8. Sulphate of iron.

9. Ochre yellow, very impure.

10. Ferruginous quartz; purple tint; occurs in cavities in the ore.

The side of the hill, where the mine is situated, has been opened to a depth of forty feet, Many thousand tons of iron ore were obtained from this mine, when the works at Rossie were in operation, and the quantity is apparently inexhaustible. It has also been traced to a distance on the northwest" (Kearney bed?) "and a quantity of ore obtained."

The width of the principal deposit in the Parish bed, I am informed, is from 40 to 50 feet, and the expense of raising the ore is one dollar per ton.

The *Tate and Polley veins* in Hermon are situated upon the two opposite sides of a ridge of gneiss rock, which runs northeast and southwest, the rock dipping northwest. "The ore of the Tate resembles that of the Parish vein, being of a bright red color and earthy in its texture. The Polly vein has much of the same character, but contains much quartz; it is a leaner ore."†

The ores about *Theresa Falls* are described as generally of lean character, much mixed with quartz. See report above quoted, p. 376. These ores have been represented to me as very abundant, very accessible and convenient to the river and lake navigation, as well as to large supplies of good hard wood for charcoal. Their geographical position in regard to the great lakes, and the whole western country, which north of the Ohio furnish no primary ores, except on the southern shores of Lake Superior, gives an importance to this district, which I think, has been rather neglected.

The *Sterling vein* is in Antwerp, five miles southeast of Oxbow, near the line of St. Lawrence county. It is enclosed in gneiss, and is accompanied with serpentine. It spreads out over a wide area, and affords ores similar to these of the Parish and Kearney beds, "principally the red mass or the oxide in an earthy state." It is somewhat siliceous, containing crystals of quarz.

Beside the specular ores, this district also contains in the eastern part of St. Lawrence county, veins of *magnetic ores*; and in many localities *bog ores* also have been worked. Though the former rival in extent the largest beds of iron ore in the United States, they are too far back in the country, which is rough and unsettled, to be of much present importance.—One in the township of *Chamont* is thus described by Professor Emmons. "It is situated upon the Oswegatchie river near the crossing of the Albany road. The vein is in a hill or rocky eminence running east and west, about 100 feet high on the south side and 50 on the north side. The top of the ridge is a naked and smooth rock about 50 rods wide, and near a mile in length. The whole of the hill is magnetic iron and quartz or white flint, a pepper and salt mixture. Some parts are richer in iron than others, but none are destitute. Some portion of the mass is nearly a pure oxide, a magnet taking up about 90 per cent.; while others yield by this mode of trial only 50 per cent. The ore is fine granular, the grains being only of the size of white mustard seed." * * * "The mass of ore resembles the Palmer vein in Clinton county, being black, fine grained and strongly magnetic." * * * "The gangue is one, which indicates a favorable result in reduction."

Another bed near by has been found in hypersthene rock, like that of Adirondac, Essex county.

For the following account of an ore bed in the township of Clifton, on the Grass River, above Russell village, I am indebted to the Honorable John Leslie Russell of St. Lawrence Co.

"Near the centre of the town is an immense mass of this ore (the magnetic), known as the "*Dodge*" ore bed. Large quantities of it have been transported over bad roads through the woods, to Edwards and Fowler, and it is found to make excellent iron, either in forges or furnaces, and by mixing with specular and hematites very much to improve the *quality* of the product.

The Dodge ore bed is a hill, apparently of iron, mixed with rock in irregular masses, evidently thrown out from a vein below. But there has not been sufficient examination to ascertain the situation of the *true vein* at that point. On each side of the Dodge ore bed, in a northeasterly and southwesterly direction, regular veins, from six to twelve feet in width, of purest magnetic ore are found in five or six places, where the ridge are denuded, so as to

* The roads over which the ore is hauled, acquire the same color; and the snow, it is said, in a little while after falling presents a most singular red appearance.—J. T. H.

† Emmons, State Report, page 346.

show the primitive rock. None of these veins have been opened to any extent. Mr. Parish, who owns the northeast quarter of the township, has raised about 100 tons from a well defined vein, near the northeast corner of the township, for the purpose of testing it in his furnace at Rossie. The ore is granular oxide, free from all mineral substances, except small grains of quartz and hypersthene. It is entirely free from sulphur, which injures the other ores of the county for *bar* iron.

This ore more closely resembles the "shot ore" of the Arnold vein in Clinton county than any other ore discovered in this State; and from tests of it on a small scale, will probably produce bar iron (with charcoal, equal to best Swedes and Russia iron.—In quantity it is inexhaustible and the expense of raising it cannot exceed 50 cents per ton. For furnaces it needs very little preparation, and no washing. It is situated near abundant water power, and surrounded by large tracts of best woodland, for charcoal."

The *Bog ores* of Brasher have been largely used: furnaces at *Brasher, Waddington, Norfolk and Westville* having been wholly or in part dependent upon them. Professor Emmons speaks of them as of good quality, easy to work, and making a soft tough iron (pig iron?); but rarely yielding more than 15 per cent. The beds are five or six miles long, and the average thickness two feet. After being dug out, the ores are renewed in fifteen or twenty years.—One furnace in Brasher makes 800 tons of pig iron annually.

Mr. Finch (before quoted) says—"At Norfolk I visited the furnace where cast iron is made during the winter season. They use bog ore, which is brought from some distance. It is classed into three kinds—loam-ore, shot-ore, pan-ore; varieties which arise merely from the state of aggregation. At a forge in the same village, where bar iron is made, they mix a proportion of the protoxide of iron, called mountain ore, with the varieties mentioned above. The mountain ore, which is brought from Malone, contains some very fine octohedral crystals."

Bog ore has been found in Fowler, and used in the furnace at Fullerville.

"In Gouverneur is a bed containing a great abundance of ore, in which there are large quantities of twigs and branches and roots of trees of all the kinds which grow in the neighborhood. It contains too large a proportion of sulphuret of iron to be used without roasting." * H.

Statistics of Lowell Manufactures.

The first objects of interest are the factories, which extend in a continuous line to the Merrimack river, from Pawtucket Falls, to the junction of the Merrimack and Concord rivers. A mile of mills and machinery. Then on the opposite side of the city are other mills numbering about twelve.

The first corporation was commenced in 1822, under the direction of Messrs. Patrick T. Jackson, Nathaniel Appleton and Kirk Boot, taking the name of Merrimack Manufacturing Company, for making prints and sheetings. In 1840 the Merrimack company employed nearly 1700 hands, male and female, this year about 2050. There are 12 corporations, incorporated in the following order:

Merrimack Manufacturing company, incorporated in 1822. Capital stock $2,000,000. There are six mills exclusive of print works, containing 67,965 spindles and 1920 looms, which produce 345,000 yards of cotton cloth weekly. Emery Washburn, Esq., Agent.

Hamilton Manufacturing Company, incorporated in 1825. Capital stock $1,100,000. Four mills and print works are included in the company, containing 36,228 spindles and 1086 looms, which produce 180,000 yards of prints, flannels and sheetings weekly. They hire 1200 hands. John Avery, Esq., is Agent of the cotton department, and Wm. Spencer of the Print Works.

Appleton company, incorporated in 1828. Capital $600,00. Two mills, containing 17,920 spindles, and 600 looms, producing 130,000 yards of sheetings and shirtings weekly, with the aid of 520 hands, —Agent, George Motley, Esq.

Lowell Manufacturing company, incorporated in 1828. Capital 900,000. Two mills, one cotton and one woolen carpet mill; 220 cotton looms and about 60 carpet power looms, which, with 880 persons, manufacture 6500 yards of carpeting, 40 woolen rugs and 95,000 yards cotton cloth weekly, all under the agency of Alexander Wright, Esq.

The Middlesex company was incorporaetd in 1830. Capital $600,000. There are four mills, and three dye houses, in which are 16,340 spindles; 45 looms for broadcloth, and 325 for cassimere, employin 1,750 hands, and making 18,957 yards of cassimere, and 2334 of Broadcloth. Agent, O. H. Perry, Esq.

Suffolk Mills, incorporated in 1830. Capital stock $600,000. 14,448 spindles, and 488 looms, under cover of two mills, and worked by 500 hands, making 100,000 yards drilling per week. John Wright, Agent.

The Tremont Mills were incorporated in 1830, and have a capital stock of $600,000. Two mills, containing 14,560 spindles, and 517 looms, producing 120,000 yards of sheetings and shirtings, with the aid of 500 hands, weekly. Under the agency of Chas. L. Tilden, Esq.

Lawrence Manufacturing company, incorporated in 1830, with a capital of 1,500,000 dollars. There are five mills, 44,800 spindles, and 1260 looms, worked by 1400 hands, who produce 260,000 yards of printing cloths, sheetings and shirtings, weekly, Agent, John Aiken, Esq.

Boott Cotton Mills, incorporated in 1825. Capital $1,200,000. Five mills and picker house; 41,712 spindles and 1338 looms, worked by 1100 hands, making 220,000 yards drillings, shirtings and printing cloths, weekly. Agent, Hon. Linus Child.

Massachusetts Cotton Mills, incorporated in 1839. Capital 1,800,000 dollars. Six mills, including the Prescott Mills under the same agency; 45,720 spindles, and 1459 looms, worked by 1500 hands, making 475,000 yards sheetings, shirtings and drillings. Agent, James White, Esq.

Lowell Bleachery, incorporated in 1832. Capital 210,000 dollars. For bleaching and dying cotton goods 220 hands are employed, dying 2,000,000 yds. and bleaching 4,000,000 lbs. annually.

The Lowell Machine Shop, employing 700 hands, nnder the agency of W. A. Burke, Esq.

One pound of cotton will make, on an average, 3 2-10 yards of cloth. The wages of the operatives are paid to them once a month, regularly, and always sure pay. There are three banks in the city, viz: railroad, capital 600,000—Lowell, capital 200,000—and Appleton, capital 100,000 dollars. There are two Savings Banks, and the principal depositors are operatives. There is also a hospital established by the companies, for the accommodation and comfort of the operatives when sick, under the management of one of the ablest physicians and surgeons of the Eastern States, Dr. Gilman Kimball. The population in 1820 was 200, now it is estimated at 35,000. There is a valuable library owned by the city, containing about 8000 volumes, to which any person can have access by paying the small sum of 50 cents per annum. The terms are so low that the working class have access as well as the wealthy.

The fire department is perfect. There are 11 engines fully manned, together with 16,410 feet of hose. The firemen are paid in service time by the city, at 20 cents per hour. There are also force pumps at regular distances, on the principal streets, but more particularly around the corporations, through which water is forced by the action of the mills, and with which most of the streets are showered in the warm season, instead of the old custom of a "cistern on wheels," and done much quicker.

The average wages of females, clear of board, per week, 2 dollars—men, per day, 80 cents.

The Middlesex company annually make use of 6,000,000 teasels.

Each corporation has boarding houses to accommodate their own help.

The city is one of the healthiest in the Union.

The population, as a class, are an active, Yankee set.

The powder Mills, belonging to Oliver M. Whipple, Esq., are situated abont half a mile from the city, and produce a large quantity annually.

The Mechanics' Reading Room contains all the principal papers of the United States and England.

The public schools are numerous, and attended on an average by four thousand daily.

500,000 dollars were expended in making "The New Canal, so called, commenced in June, 1846, and opened on Thanksgiving day, Nov. 25, 1847. It is nearly one mile in length, an immense work, a quarter of a mile being cut through solid rock.—It was under the direction of James B. Francis, Esq. An iron fence is erected from one end to the other, and on each side trees are set out, which makes a delightful promenade.

Cotton Crop of Alabama.

A correspondent of the Mobile Daily Advertiser gives the following speculations and figures in regard to the cotton crop of Alabama for 1848—its weight and value, at the average price sold at in Mobile, for the season of 1848-9.

"The subject above is one of great interest, and as the inquiry has been frequently made at different places of me, I have taken some pains to investigate it, and if, on reading the result, I afford satisfaction to the feelings of Alabamians, I shall feel fully recompensed for the research and communication. Absolute correctness is not pretended to be arrived at, but the intelligent reader, at all conversant with the size of the counties and qualities of their lands, will at once perceive that when estimates are made, they cannot be wide of the mark. To the figures:—

Receipts at Mobile from 1st September, 1848, to 1st Sept., 1849, 518,709 bales, averaging each 509¾ pounds is.....	264,343,853
Weight of crop of nine counties on the Tennessee River, De Kalb, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Marshall, Madison and Morgan, which goes down that river, or is hauled to Memphis, as per census of 1840,	49,170,224
Weight of 65,000 bales of cotton estimated to go down the Chattahooche, etc. from the northeastern and eastern counties, say Cherokee, Benton, Randolph, Russell, Chambers, Barbour, Dale, Henry and Covington.....	33,125,625
Consumed in factories and home looms, 12,000 bales, at 509¾ lbs. to bale.....	6,370,313
	353,010,015
Deduct number of bales from the Tombigby, 80.000 from the eastern counties of Mississippi, 509¾ lbs.....	40,770,000
Crop of Alabama for 1848-9—lbs..	312,240,015
Which in bales of 509¾ lbs. each would be.....	612,922
Or of 350 lbs each—bales.....	892,117
Referring to the Merchants' and Planters' Price Current for the 1st of Sept., 1849, we see the receipts of cotton here from the Tombigby river are 175-254 bales. To get that of the State of Mississippi included therein, I put Monroe, Lowndes, Itawamba, etc. to be.....	50,000
Noxubee 20,000, Kemper, Lauderdale, etc. 10,000.....	30,000
	80,000
Making the remainder of the 175,250 bales. I put down Mobile, Washington and Clarke.....10,000 Marengo, 25,000, Choctaw, 7000.....	32,000
Sumter 30,000, Green, in the Fork, 10,000.....	40,000
Pickens, Fayette, and Marion..	15,000
	97,000
	177,000

Slightly overrunning the receipts from that river.

"I have no means here of ascertaining the crop of North Alabama at this time, so I adopt the census report for 1840, for the counties referred to on

* Emmons', page 349.

the Tennessee, with this remark, that I have heard the North Alabama crop estimated at much over these figures, and that with regard to the census report for the year 1839-'40 for the remainder of Alabama, it is grossly deficient.

"That it may be more strikingly apparent, I will here submit that the whole weight of the crop of Alabama is put down at 117,138,823 lbs., and deducting 49,170,224 lbs., the weights in it of those counted, we have 67,968,599 lbs. for Eastern and South Alabama. while the receipts at Mobile alone for the season of 1839-40 were 445,725 bales, weighing 213,948,000 lbs. at 480 lbs. (which was perhaps a few pounds under their average at that time); thus more than trebling the quantum allowed these sections by the census report. The inference therefore is, that the North Alabama crop may have been somewhat larger, though I do not suppose as much in proportion as the south was rendered deficient. To the shameful errors of the census may. perhaps, be ascribed in part the really ridiculous estimates the Commissioners of Patents have been making of the extent of the Alabama cotton crop. Tho' they are entitled to no credit for their research, as the prices currents here, without including in them the Eastern and North Alabama receipts, would have shown them the utter destitution of correctness in their reports and estimates.

From my knowledge of the present production of most of the counties named above, on the Chatahoochee, I judge them to yield 80,000 bales. Add to that 10,000 bales which I think go from Macon and Pike counties to the Chatahoochee, we have 90,000. From this deduct 25,000 coming out of that section to the Alabama river, and it leaves 65,000 bales of Alabama cotton, as per estimate above, going down the Chatahoochee, &c.

The cotton crop of Alabama, 312,240.015 lbs., if sold at what the average price our exports from this port, of 527,000 bales, commanded, say 6¼c., amount to 19,515,063 47; or, exclusive of 12,000 bales manufactured in the State, 305,869,702 lbs. at 6¼, amounted to $19,116.676 37.

Sept. 14, 1849 ALABAMA.

Transactions of the British Association.

DISTRIBUTION OF GOLD ORE OVER THE SURFACE OF THE GOLD.

Sir R. I. Murchison drew attention to "the distribution of gold over the surface of the globe, and a comparison between the auriferous of the Ural Mountains and California." Sir Roderick stated that, this subject having excited considerable interest, he took occasion to bring it before them—not only to develope his own views and those of other authors, but also to elicit by discussion the knowledge of the geologists, mineralogists, miners, and statists, who might be present. An enlarged Mercator's projection of the world was exhibited, on which all the leading ridges which had afforded gold ore, in times past or present, were marked.—Referring to the works of Humbolt and Rose on the Ural Mountains, as well as to those of Hemersen and Hoffman—the former of whom some time ago made a map of all the gold tracks of Siberia, and also ciiing the numerous contributions of M. Adolf Erman, and particularly the last—Sir Roderick gave a condensed view of his own observations in the gold regions of the Ural Mountains. The exploration of that chain, with his associates, M. de Veneuil and Keyserling, had led him to form the opinion that gold veins had generally been produced wherever certain rocks of intrusive character—namely, greenstones, porphyries, sientes, granites, and serpentines—had been intruded through palæozic rocks, particularly as affected the Ural among those of the Silurian epoch. It was, in short, where clayslates, limestones, and grauwacke sanestones had been penetrated by such igneous rocks, that quartz veins abounded, and with them a diffusion of gold ore in grains, leaf, and veins. To the general view of Baron Von Humbolt, that the richest gold deposits were those which were derived from ridges having a meridian direction, M. Adolf Erman was decidedly opposed; but Sir Roderick was of opinion that, although they might be unable to explain the cause, it was a fact that the greatest quantity of gold ore had been obtained from chains having a nearer relation to north and south than to equatoral, or east and west directions—due perhaps to the general form of the chief masses of land, and the prevailing strike of the palæozic rocks. He thought, however, that these terms, meridian or equatoral, were used in the more general terms employed by miners. He next pointed out the error into which some persons had fallen, of supposing that the Uralian mines were worked underground—the only small subteranean work there yielding a very slight profit. All the other mines there were simply diggings and washings, which were made in the detritus, or shingle, accumulated on the slopes of the ridges and in the adjacent valleys, and, with one exception, were all upon the east side. This phenomenon in the Ural Mountains was a necessary result of the structure. Exhibiting maps and sections, and views of the Ural Mountains, and referring to the description of California by Erman and others, he entered upon a comparison between the two countries, and showed that there was a very great coincidence of mineralogical structure; and that with these "constants" the same results obtained in America as in the Ural. He contended, however, against the inference that any large tract of California would be found to be as uniformly auriferous as the banks and slopes of the upper tributaries of the Sacramento. The breadth of the auriferous detritns of California had yet to be ascertained As, however, the lower or coast ridge, which passed by San Francisco, seemed to be in miniture, what the higher parallel mountains were upon a larger scale, in being composed of greenstones, porphyries, grauwacke, sandstones, and quartz rocks, it was probable that very much of the great intervening valley of the Sacramento might be strewed over at intervals with auriferous *debris*. He glanced at the various modes of procuring gold; and, adverting to the fact that in the Ural Mountains the veinstones, *in situ*—in this case little or no admixture with other ore existed—had proved very slightly remunerative, when worked further downwards; he remarked on the view of Humbolt, who, looking to the great lumps, or "pepites," occasionally found in the surface rubbish, supposed that there might have been some connection between the production of gold and the atmosphere, since, judging from these specimens, it was from the superficial extremites of these quartz veins that the richest branches of gold must have been derived—the veinstones which followed downwards, having usually proved unproductive. Notwithstanding that there were cases, chiefly on a small scale, as in Hungary, where gold ore continued to ramify in veinstones of great depths, yet it was a statistical fact that all the great masses of gold ore had been, and were, deprived from superficial rubbish. The major part of detritus he carefully distinguished from modern alluvia. The existing rivers had little more to do with the phenomenon than that they had, by terrestrial action, occasionally laid bare the edge of the previously formed gold accumulations. He did not deny, however, that where streams flowed directly from rocks, *in situ*, which were impregnated with gold, that auriferous detritus would be the natural result. Sir Roderick then traced the history of gold and its developement, as known to the ancients and our ancestors of the middle ages. He glanced at the operations of gold finding in Wales, in Scotland, and Ireland, which had at one time been worked, and were now abandoned. The Scythian tract had remained unknown till this country. The Russians were similarly ignorant till the same recent period. These Russian mines that formerly afforded £500,000 sterling annually, now yielded nearly £4,000,000. As for California, he speculated that judging analogosly, it would only be in certain patches that very great wealth would be discovered; and that it would be hasty to conclude that, because gold detritus had been discovered near the sources of the Sacramento, that all the intermediate tract should be equally productive. The California discovery was not likely to produce any change in the standard. He then shortly adverted to the discovery of gold in Austria. In support of his general views, he called forth the evidence of Professor Rogers, of Philadelphia. The President agreed with the general opinion of Sir R. Murchison; but he thought that, as geologists, they should receive with caution the opinion that gold was more abundant on the surface than at great depths; neither should they take it for granted that the gold bearing mountains had a bearing from north to south rather than from east to west—as in California, for example, they differed somewhat from the position laid down, and the Pyranees differed completely. Professor Rogers remarked, that he had invariably in his researches found gold was generally obtained with more facility by washing the alluvium in the beds, or along the banks of the rivers; but these superficial deposits were in general speedily worked out. He did not think that it was at all probable that mining in the solid vein rocks would ever be profitable, not only from the great expense of penetrating for it, but also from the difficulty in separating it from the sulphates of iron, copper, and sometimes lead. He agreed generally in the opinion, that gold was always found in peculiar combinations of strata, and he also thought that the deposits found in the alluvium were merely superficial. The regions in which gold was to be found were much more extensive than was generally imagined. He considered that the whole regions extended from Lower Canada down to the central part of Gorgia, a distance of about 100 miles, through which the gold quarry rocks or auriferous deposits, have been discovered. He thought that the superficial deposits of gold found in these regions and in Calirornia would, after the lapse of a few years, be exhausted; and as he conceived that the surface gold was greater in quantity than in veins, there was little fear that more would be obtained than was simply necessary for the purposes of society.—Prof. Sedgwick thought that the condition might be constant, but the age would not be so; but he could not believe, for a hundred different reasons, that gold was more plentiful on the top of veins than in the veins themselves; and lastly, he could not agree that the gold mountains ran from north to south.—Sir H. De la Beche agreed with Prof. Sedgwick, that the gold was not found, as had been stated by, Sir H. Murchison, in the older palæozoic rocks, and that it depended more on mineral and physical conditions rather than on the age, inasmuch as metals (and why not gold?) had been found in formation equal to the coal measures. His reason for supposing that gold was not confined to the tops of the veins was, that conditions being the same, the results would follow.—Sir R. Murchison then replied, showing that the theories of those who differed with him with regard to the greater abundance of gold at the surface than in the veins, differed with every practical man on the subject; they differed also in regard to the fact, that the hill ranges were from north to south more than to the equatorial line. This was so in all cases in which large quantities of gold were found, although some modification might be necessary as related to small quantities.—Mr. Darwin stated an instance in which that had occurred.—*Mining Journal.*

On a Method of Suppyling the Boilers of Steam-Engines with Water, by *Mr.* W. *S. Ward.*—Mr. Ward,s suggestion was to use a small supplementary pumping engine, having a working cylinder with valves so arranged that the piston may be put in motion by either steam or water passing through it, to be supplied with steam, by a steam pipe, the entrance to which is somewhat narrow, and inserted in the boiler to be supplied a little above the leval at which it is desired to mantain the water therein. Such aperture should also be about the centre of a marine boiler. The working cylinder should be attached to a pump of such size as to be easily worked by the pressure of the steam. The exit pipe of the steam cylinder must communicate with the inlet pipe of the pump, so that if the cylinder be actuated by steam, the steam will be condensed, and its heat communicated to the water to be supplied to the boiler; or if the working cylinder be worked by water proceeding from the boiler, a considerable part of such hot water will be returned by the pump. The mode of operation of such apparatus will be, that whenever there is a working pressure of steam in the boiler, the apperatus will be in action; but if the level of the water be below the aparture of the small steam pipe, the action will be moderately rapid, and a supply of water be pumped into the boiler; and when the water in the boiler rises to the aparture, this being small, will be as though choaked by the water, which will be forced through the working cylinder, moving the piston and pump very slowly; a portion of the water thus escaping from the boiler will be returned by the pump. Such last mentioned action cannot continue long, inasmuch as the

level of the water must be reduced; therefore the average level of the water in the boiler will be, with slight osillations mantained at the heigth of the supply pipe. In the course of a brief discussion which followed, the President said that it was a new and ingenious idea, but one which he was afraid was not practically useful.—*Mining Journal.*

Ærial Nocturnal Excursion from Marseilles to Turin.

Marseilles, Sept. 11.—M. Arban, the æronaut ascended in his balloon from the Chateau de Fleurs (the Vauxhall of this place) at half-past six in the evening of the 2nd instant, and alighted at the village of Pion Forte, near Turin, the following morning, at half-past two, having accomplished the distance, about 400 miles, in eight hours. The particulars of this voyage are related by M. Arban himself, in one of our morning papers, as follows:—.

"I ascended from the Chateau de Fleurs on Sunday evening, the 2nd inst., at half-past six. At eight, I was over the wood Esteret, where I ascertained I was at a height of 4,000 metres. The temperature of the air was cold, but dry, my centigrade thermometer marked four degrees below zero. For The wind was south west, and sent me over Nice. For nearly two hours surrounded by very dense clouds; my cloak no longer sufficed to keep me warm; I suffered much from cold feet. I, nevertheless, determined to proceed and to traverse the Alps, from which I knew I was not far distant.

"My provision of ballast was enough to raise me above the highest peaks. The cold gradually increased, the wind became steady, and the moon lighted me like the sun (*comme le soliel en plein jour*) I was at the foot of the Alps; the snows, cascades, rivers, all were sparkling; the ravines and rocks produced masses of darkness, which served as shadows to the gigantic picture.

"The wind now interrupted the regularity of my course. I was occasionally obliged to ascend in order to pass over the peaks. I reached the summit of the Alps at eleven o'clock, and as the horizont became clear, and my course regular, I began to think of supping.

"I was now at an elevation of 4,600 metres. It was indespensably necessary for me to pursue my journey and reach Piedmont. Chaos was only under me, and to alight in these regions was impossible. After supper, I threw my empty bottle into the snow beneath, where possibly some adventurous traveller will one day find it, and be led to conclude that another before him had explored the same desert regions. At half past one in the morning I was over Mount Misso, which I knew, having explored it in first journey to Piedmont. There the Durance and the Po take source. I reconnoitered the position, and discovered the magnificent plains of the mountain. Before this certainty, a singular optical delusion, occasioned by the shining of the moon upon the snow, was like to make me think myself over the open sea. But as the south west wind had not ceased to blow, I was convinced by this fact as well as by others I had noticed, that I could not be over the sea. The stars confirmed the accuracy of my compass, and the appearance of Mount Blanc satisfied me that I must be approaching Turin. Mount Blanc to my left, on a level with the top of which I was, being far above the clouds, resembled an immense block of crystal sparkling with a thousand fires.

"At a quarter to three, Mount Viso, which was behind me, proved to me that I was in the neighborhood of Turin. I determined to alight, which I did without any difficulty, having ballast enough to go further. I alighted near a large farm yard, where I was surrounded by several watch dogs, from whose caresses I was protected by my cloak. Their barking awakened the peasants, who were more surprised than freightened at seeing me. They admitted me to their houses; informed me that it was half past two, and that I was in the village of Pion-Forte, near Stubini, six kilometres from Turin.—*Irish Railway Gazette.*

Improvement in Rotary Engines.

Several private trials took place last week, at Taplow-on-the-Thames, with a rotary engine, which has been brought to its present working condition by Capt. the Hon. W. E. Fitzmaurice, (late 2d Life Guards,) and his brother-in-law, Mr. Hartford.—The engine is very simple, merely consisting of 2 pieces so mathematically arranged that the interior part works in the outer with the greatest ease, being free from dead points, and without the slightest vibration, however great the velocity. It has no springs of packing, and the parts meet each other so harmoniously as only to give a humming noise like a spinning top; and it is not in the least liable to get out of order, the wear being perfectly uniform thro'-out. The entire motion being a rolling instead of a cutting one, the engine will last long without repair, as the surfaces become case hardened in a very short space of time. The trials took place in the presence of several scientific gentlemen and engineers of eminence in their profession, in a frigate's pinnance, the engine being constructed for the government.

The boat is ten tons burden, carrying 5½ tons drawing 4 feet of water. She is 32 feet long and 8 feet breadth of beam, made for carrying men and cannonade, but not in any way calculated for speed, and yet the engine of 10 horse power, occupying a space of 21 by 7 inches, drove a screw propeller of 3 feet in diameter and 4 feet pitch with such velocity as to make 200 revolutions in a minute, the motion being given on the direct action principle. Although the boat was not at all calculated for speed, she was propelled against a stream a distance of 2 miles in twenty minutes, equal, allowing for the strength of the current, to 8 miles an hour. The engine weighs considerably less than 1 cwt. to each horse power, and requires much less fuel than the ordinary engine, and is so easy set in motion, graduated to any velocity, or stopped, that a boy 12 years of age might manage it with one hand. Cap. Fitzmaurice makes no secret of the invention, but shows its intention freely, as it is intended for the public service. An engine of 100 horse power on Capt. Fitvmaurice's construction would only occupy a space of 4 feet by 2 feet.—*London Times, Sept.* 10th.

Pacific Railway in Illinois.

At a meeting recently held at Chicago, to appoint delegates to the St. Louis convention, the following resolutions were submitted by the Hon. S. A. Douglass U. S. Senator, and adopted the meetings.

Resolved, That we cordially approve of the general proposition of connecting the navigable waters flowing into the Atlantic and the waters of the Pacific, by means of a national railroad.

Resolved, That in the prosecution of a work so eminently national and useful, all local and sectional feelings and interests should be laid aside, and that plan and route selected which are best adapted to the object in view.

Resolved, That the line and termini of the road should be definitely established by a vote of Congress, after the survey and estimates shall be made, and not before.

Resolved, That from explorations heretofore made and from all other reliable information within our possession, we are inclined to the opinion that the route from Council Bluffs on the Missouri river, through the South Pass of the rocky mountains, to the Pacific Ocean, will be found to possess more advantages than any other, for the following reasons:

1st. The South Pass is the only place where it has been ascertained to be practicable to construct a railroad across the rocky mountains.

2d, The South Pass is central as it respects our possessions on the Pacific, it being on the dividing line between California and Oregon.

3d. The vicinity of Council Bluffs is the nearest and most eligible point on the navigable waters of the Missouri river to the South Pass of the rocky mountains.

4th. Council Bluffs are already connected by steam boat navigation with St. Louis, Memphis, New Orleans, Nashville, Louisville, Cincinnati, Pittsburgh, and, in short, with all the towns and cities upon the Mississippi and its tributaries.

5th. The Bluffs being on the west bank of the Mississippi river, beyond the limits of any State of the Union, no question can arise respecting the constitutional power of Congress to construct the road.

6th. The entire line of the road will be in the Territories of the United States, where the jurisdiction of Congress cannot be questioned, and where the right of way, the materials, and all the lands are still the property of the Union.

7th. Council Bluffs will be a central and convenient point, where all the great lines of railroads now progressing from the Atlantic to the Mississippi valley can concentrate and connect with the great national road to the Pacific.

Resolved, That Congress should encourage the construction of three branch roads from Council Bluffs (or such other points as shall be selected for the commencement of the national railroads) to wit: one to Chicago, one to St. Louis, and one to the north of the Ohio or Memphis, by making liberal grants of land on the lines of said branches to the States respectively through which the same shall pass, to be applied by the Legislatures of the respective States to the construction of said branch roads, and to no other purpose whatever.

Resolved, That our delegates to the St. Louis convention be instructed to harmonize their action in said convention with the principles set forth in the foregoing resolutions.

We look upon the above as an important movement, and as indicative of the course to be pursued by Mr. Douglass, who at the present time is a leading man in the politics of the west. It is a proposition for a compromise between the rival interest of Chicago, St. Louis and Memphis, by which all those interests can unite in support of one trunk line, being connected with it by branches, the construction of which is to be aided by the general government. Nothing is more likely than that these rival interests should unite upon the proposition of Mr. Douglass; contenting themselves with a connection with the main line with a branch, rather than to run the risk of losing such connection by each one seeeking to make itself the exclusive terminus, Mr. Douglass will assign as an additional reason for making Council Bluff the terminus, the unconstitutionality of the general government constructing such a work within the limits of the state. To our minds, the probabilities are that a scheme similar to the one proposed above will unite the extreme west, and that if this section could have the power, the eastern terminus would be a matter of bargain between different quarters of that country; and proves conclusively at this early day, that the decision of the question should never be a matter of bargain and sale by the politiciaans of the country, but should be entrusted to a body of men competent to decide, and who have no personal interest in the results of their decision.

Railroad through Texas.

At a convention assembled at Gonzales on the 18th ult., to appoint delegates to the Memphis Convention, the following resolutions were passed:

Resolved, That the Legislature of the State of Texas be, and the same is hereby requested, at as early a day as practicable, at the next session, to take suitable measures, by the employment of competent engineers, etc., to ascertain the practibility for railroads of those portions of Texas where most obstacles have been heretofore supposed to exist, and to lay the same before the next Congress of the United States—and to adopt such other measures as in its wisdom may seem best, to secure the passage of the great national railroad through the inhabited portion of Texas.

Resolved, That in the opinion of this convention, the most practicable route for the construction of a national railroad to connect the Pacific with the Mississippi, upon the territory of the United States, whether it regards distance, climate, face of the country, or cheapness, is from San Diego on the Pacific to the Passo del Norte on the Rio Grande, thence by a line through or South of the San Seba Pass, to Memphis, or some point south of it.

Georgia.

The Georgia railroad company on Tuesday declared a dividend of *three dollars and a half* per share from the business of the last six months, upon their entire stock of four millions.

East Tennessee and Georgia Road.

We were pleased to find, on a recent visit to Dalton, that the workmen employed on this road are progressing very rapidly. Already about 70 miles are graded. Gen. Greene is erecting a saw mill, capable of cutting 10,000 feet a day. So soon as this gets in operation he expects to begin to lay the rails on the road already graded. A tender, it is expected, will be running on it to convey materials forward, on or before the first of January next. The completion of this road will give a new impulse to the spirit of enterprise in East Tennessee and Northwestern Georgia, and draw still closer the chords that bind in one the interests of the States in which it lies.—*Atlanta Intelligencer.*

Alabama.

Selma and Tennessee Railroad.—In addition to the Mobile and Ohio railroad, which is now engrossing so much of the attention of Mobile and the western portion of this State, another very important work is projected, and a portion of it already in process of construction from Selma, a town situated on the most northwesterly angle of the Alabama river, about 230 miles from Mobile by this river, and running through the counties of Dallas, Bibb, Shelby, Talladega and Benton, to Gadsden in Cherokee county, there to intersect the Nashville and Chattanooga railroad, a distance from Selma, of about 180 miles; opening in connection with the Alabama river a very direct communication between Mobile and the central and eastern portions of the State, and the railroads of Georgia and Tennessee. This road is hardly less important to the State and Mobile, than the Mobile and Ohio road. The proposed line traverses one of the finest portions of the south, equal to any in the the fertility of its soil, and superior to any other in its vast mineral resources.—The great length of the Mobile and Ohio railroad, and the limited means of the inhabitants along a considerable extent of its line, must render the completion of this road a work of time. The construction of the Selma and Tennessee road is within the ability of those immediately interested in it, and may be completed at an early day, if pushed with the vigor and energy which we have a right to expect.

A meeting was held at Selma on the 24th of Sep. last, being an adjournment of one held at Shelby Springs on the 27th of Aug., to promote the construction of this road, at which were represented the counties of Dallas, Bibb, Shelby, Talladga, Benton, Montgomery, Coosa and Autaga, Cherokee, Mobile, Marshall, Perry, and St. Clair, at which P. Phillip, Esq., of Mobile, presided.

A difference existed at this meeting upon the question of the southern terminus, it being divided between Montgomory and Selma. A large majority of delegates were in favor of Selma, which is on the most direct line, although Montgomery is by far the most important town, and is the capital of the State. Upon the general object of the meeting the delegates were cordially united.

Relative to this matter, we copy the following from the Alabama Planter, giving an account of the meeting:—

At Montevallo it enters the entire of the immense iron, coal, and marble formations, and with this means of quick transportation to market, a large amount of capital and labor would speedily be invested. From Montevallo to Centreville, Bibb county, taking the course of the Cahawba river and tributaries, the distance is about 40 miles. At the distance almost of every mile, sites for mills and manufactories can be had, where there would never be any interruption from lack of water. Both sides of the river throughout, abound in the richest deposits of coal, iron, marble, etc., and as if nature designed it for an extensive manufacturing district, the best kind of timber—pine, cedar, ash, walnut, poplar, oak and hickory—are abundant, and extensive quarries of limestone exist everywhere. There is also distributed throughout this section, tillable land sufficient for producing food for a large population, and to crown all, there is not a more healthy region on the continent. The most distant point of this section is only twenty miles from Montevallo, and of course the principal products of it will be conveyed there for transportation to market. In regard to some of the minerals of this region, we have before us a letter which says: "the Cahawba coal beds are from 4 to 10 feet thick. There, too, is the marble of almost every shade in the wildest profusion, and the limestone. The lime burnt from it is equal to the best Thomaston." The coal beds and iron mines of portions of Jefferson county are also convenient to Montervallo, and in that vicinity thicker strata of coal have been found than elsewhere, and the richest description of iron ore is abundant in every direction.

On the line beyond the Coosa, minerals are abundant, and the agricultural and manufacturing capacities of the country are superior. On reaching the upper terminus, the teeming products of North Alabama and Tennessee will find their way by this road to our port.

The travel on this road will also be an important item, and when finished will form with works now complete and in progress in Tennessee and Virginia very direct and eligible route to the east. An eminent engineer speaking of this very enterprise says—"a look at the map of the United States will satisfy any one that no route, taken as a whole, can be projected, which can compete with this in directness of course and easy grades."

From Selma to Montvello the work is nearly half done, having been surveyed and 27 miles graded.

Kentucky

Railroad from Henderson to Nashville.—We give below the proceedings of a meeting held at Henderson, Kentucky, for the purpose of promoting the building of a railroad from that place to Nashville, Tennessee, from which latter place, a road is in a state of great forwardness to Savannah, Georgia, and Charleston, South Carolina. Evansville is the southern terminus of the Michigan Canal, and of the Evansville and Mount Carmel railroad, which will eventually be pushed north to intersect the lines of railway running east and west through Indiana and Illinois. A glance at the map of that section of the country will impress every one with the importance of the road proposed, as the only remaining link between the extreme south on the one hand, and the extreme north on the other. The route presents remarkable facilities for railway construction, being unaffected by frosts, remarkably level, and running through a well wooded country. We think that the inhabitants along its line have sufficient strength to build this road; if not, we apprehend that after they have done what may reasonably be expected of them, they will have no difficulty in obtaining the necessary additional aid from the roads below Nashville interested in the one proposed. From the importance of this road, we can assure those persons interested, that if they will go vigorously to work, the means to build will be forthcoming as fast as they can be judiciously expended.

At a meeting, in the town of Henderson, on Monday the 24th day of September, 1849, composed of the people of Henderson county, Ky., and of citizens of the city of Evansville and Vanderburg county, Indiana, H. J. Eastin was appointed Chairman, and D. Banks, Secretary. The Chairman having stated the object of the meeting, introduced the Hon. Sam'l. Hall, President of the Evansville and Mt. Carmel railroad' who addressed the meeting. Judge Lockhart and Messrs. Jones, Carpenter and Ingle, of Evansville, and Col. E. H. Hopkins, of Henderson, having been called upon, also addressed the people—

Whereupon, Hon. A. Dixon moved the following resolutions, which were seconded and sustained by L. W. Powell, Esq., in a speech, and unanimously adopted:

Resolved, That in the opinion of this meeting, it is all important to the commercial, manufacturing and agricultural interests of the people of the Western States, that the railroad now being constructed from the cities of Charleston and Savannah to the city of Nashville shonld be extended to some point on the Ohio river.

Resolved further, That in the opinion of this meeting, the town of Henderson is the most eligible point on the Ohio river for the terminus of said road. First, because the country over which the road would pass from Nashville to Henderson is almost a continued level, and the cost of construction would be less per mile than to any other point on the river, and secondly because it would bring the terminus of said road within twelve miles of the city of Evansville, Indiana, at which point the great central canal, from the lakes through the State of Indiana terminates, and which is also the terminus of the contemplated railroad from Evansville, to Mt Carmel, branching and terminating at different points on the lakes, and thus with the aid of the Ohio river from Henderson to Evansville, a distance of only 12 miles, and navigable at all stages of water by the largest class of steamboats, securing a continued chain of railway and canal communication from the great lakes in the North to the cities of Charleston and Savannah on the shores of the Atlantic in the south.

Resolved further, That the citizens of South Carolina, Georgia, Tennessee, Kentucky and Indiana have a common interest in the construction of the proposed road, and that they be respectfully invited to co-operate with us in procuring from the Legislatures of Kentucky and Tennessee, a suitable charter, and of procuring subscriptions for the amount of stock necessary to its completion.

We copy the following from the Henderson Kentuckian, giving an account of the above meeting:—

A practical engineer, well acquainted with the region of the country over which the road must pass, estimated the whole cost of construction—with the engines and cars placed upon it ready for operation—at $11,000 per mile. At this rate, supposing the distance to be 130 miles, the whole road would cost $1,430,000. It is stated on reliable authority that the opening of the Nashville and Chattanooga railroad in Tennessee, on the average, added $5 per acre to all the land within ten miles on each side of the road. But supposing the opening of a road from this place to Nashville were only to add 1 dollar per acre to the present value of land ten miles on each side of the road? At that rate the rise in the value of that belt of land along the line would more than pay the estimated cost of the road by 234,000 dollars. Let us make the calculation: A strip of land 20 mls. in breadth and 130 in length, contains 1,664,000 sqr. acres. Increase the value of this land 1 dollar per acre, and it would give us 1,664,000—thus leaving a balance of 234,000. But is there any one in his senses who does not foresee at a glance that one dollar per acre would not be the half of the increased value it would give to the land thus located along the line? And is there any one so blind as not to see that the simple advance in the price of land is not a tithe of the benefits resulting to the people from such a road? It will open to the farmer a ready and speedy market for every species of produce at all seasons of the year, and to any part of the Union—so that the farmer in the interior can come then into successful competion, and stand upon an eqal footing with his more favored neighbor, located upon the margin of our beautiful rivers. It will give increased facilities to mercantile operations and the mechanic arts, open to the markets of the north and south the vast coal fields in which the Green river country abounds, create a wide spread market for the lumber in our interior forests, place every man along the line within three days' journey of the extreme portions of the Union, fill up our towns and country with an active, industrious, thriving population, spread the spirit of enterprise and intelligence as upon the wings of the wind, and banish ignorance from our borders, and infuse new life and increased vigor into every species of trade and all branches of industry. These are some of the benefits which this improvement would bring to the Green river people. Are they not worth striving for? and will

not all our citzens in this portion of the State make an effort to secure them? If they will, now is the acceptable time. A road from Nashville to *some* point on the Ohio river will be built in a very short time. And it we of the Green river country do not take hold of it now, the citizens of Louisville or some other point above us will take advantage of our lethargy and wrest it from our grasp, with all the advantages and blessings it would bring us. Let the people in Hopkins, Christian, Todd and the counties contiguous to them, take hold of the question with the same zeal and resolution that our citizens have manifested, and the work will be built.

Indiana.

Central Railway.

Mr. Smith, President of the Indianapolis and Bellefontaine railway, is pushing the work on with great energy. In a late public address at Winchester, Indiana, says the Patriot of that place,

"He exhibited to the audience a map of the railroad lines and connections, from Boston, N. York, Philadelphia, and Baltimore, through the States of Massachusetts, New York, New Jersey, Maryland, Virginia, Pennsylvania, Michigan, Ohio, Indiana, Illinois, and Missouri. He traced the lines, and showed their relative position and importance with reference to the line of the Indianopolis and Bellefontaine railroad. He said that this road was a part of the great line of railway running from Philadelphia through Pittsburgh, Beaver, Canton, Massilon, Wooster, Mansfield, Marion, Bellefontaine, and Sidney to the State line of Indiana. He spoke at length of the great importance of this line to the cities of Philadelphia and Pittsburgh, as well as to other cities, and the whole country on and near the line—said that this was to be the great thoroughfare of business and travel between the cities of Philadelphia and Pittsburgh, and the Mississippi at St. Louis, and ultimately the Pacific, as he had no doubt but that St. Louis would be fixed as the starting point in this valley, of the Atlantic and Pacific railroad. He pointed to the map and showed that the Sandusky line would intersect this line at Bellefontaine, and the Cleveland line would unite with it west of Mansfield. He said that this line would be a *straight* line in Ohio, through Sidney, to the point on the Ohio line to which the Indianapolis and Bellefontaine railroad *had been located*. He said he was happy to inform the people, that in a recent visit to Ohio, he had ascertained that the *staight line* had been adopted, and that it was resolved there, in the right spirit, to put the line under contract, without further delay, clear through to the Indiana line."

Ohio.

The Zanesville Courier of the 11th inst. has the following paragraph:

The Central Railroad Secured.—An additional subscription of 140,000 to the stock of this company was voted by the counties of Muskingum and Licking, on Tuesday last. The aggregate amount now subscribed is about 350,000, leaving but 150,000 to be obtained, to complete the amount which, it is estimated, will with the contemplated loan, build and stock the road from Zanesville to Columbus. This 150,000 dollars is apportioned, one-third to Licking county and two-thirds to Franklin, and we anticipate no difficulty in getting it us soon as wanted.

The way is now clear for effective operations.—The engineer will proceed with and complete his surveys by spring. The road will be immediately after put under contract, and in about a twelvemonth after that—look out for the locomotive.

Hillsborough and Cincinnati Railroad.

But few of our people know the rapidity with which the Hillsborough and Cincinnati railroad is progressing. We were almost astonished ourselves when we learned the facts which we now submit. The directors are using their best exertions to forward the work.

The grubbing, clearing, grading and masonry has been let out from a point about one mile and a half west of this place, to a point about three miles west of Blanchester, except about one mile and a half near Lynchburg. The whole distance under contract is between twenty-one and twenty-two miles. The work is let in small contracts, and generally to farmers through whose land the road passes, or who live in the immediate vicinity, and are to receive one-half of their pay in the stock of the road. The contractors are nearly all actively at work. Mr. Duckwall who has the first contract west of this place, finished the grubbing upwards of a week since.

By an advertisement in our paper to day, it will be seen that the grubbing, grading and masonry of the balance of the line to the Little Miami railroad, will be let out at a public letting on the 19th of November next, except one mile and a half adjoining Hillsborough, which will be delayed to give time for full and careful examinations and surveys, so as to determine the best location and termination for the road in town. The time fixed in the contracts for making the road ready for the wooden superstructure, is the first day of December, 1850, which will give time for completing it ready for running to the Little Miami railroad in two years from the present fall.

Efforts are making to obtain further subscriptions of the stock, and it is hoped and believed that the means of the company will be largely increased during the fall and winter. All friends of the road should exert themselves to aid in this matter. It is of the utmost importance to the progress of the work that the instalments already called in, should be paid without delay. To induce promptness as well as to equalize all stockholders, the board of directors have resolved to allow interest, payable in stock, on all instalments paid, or advance payments, until the completion of the road.—*Hills. Gaz.*

Ohio and Pennsylvania Railroad.

A letting on this road of 22 miles of light work in Stark county, extending from Mt. Vernon road by Louisville and Canton to Massillon, and five sections of heavy work in Wayne county, extending from the Sugar Creek summit to a point near Wooster, took place at Massilon, Sept. 29th. The number of beds presented were numerous, and the work was let at fair prices, somewhat below the engineer's estimate.

The depot is to be located at Canton. The contractors are at work upon the line in Beaver county, Pa., which was let on the 4th of July, and the location through Columbiana county is rapidly progressing.—*Cleveland Herald.*

Cleveland and Pittsburgh Railroad.

The letings on the Northern Division of the Cleveland and Pittsburgh Railroad advertised by Messrs. Chamberlain & Co. to take place on the 1st inst. were all made, and the contractors will immediately enter upon their jobs. The sections let from 22 to 48, include much of the heaviest grading on this portion of the line, and the work will be vigorously prosecuted. The lateness of the season, and the slow working of the present pile driver, will prevent much progress on the road along the lake bank before spring. Messrs. Chamberlain & Co. intend to have a steam pile driver in operation then.

A further letting on the Middle and Southern Divisions will take place on the 10th inst., at Salineville, Columbiana county.—*Cleveland Herald.*

North Carolina.

Raleigh, October 1st, 1849,

The Internal Improvement association for the county of Wake, met this evening at the court house at the usual hour, agreeably to adjournment.

The President called the meeting to order, and after the proceedings of the last meeting were read, it being understood that Ex-Governors Graham, Morehead and Swain were in the city, and would, if invited probably favor the meeting with their presence, on motion a committee was appointed to wait on these gentlemen, and request them to attend and address the meeting. Soon after the committee returned accompanied with these gentlemen, and on being introduced to the meeting by the President, Governor Morehead being first called out, proceeded to address the large and waiting audience, on the subject of the Central railroad scheme, in a speech of great eloquence and power, in which he fully demonstrated the practicability of this great work.

Governor Swain, likewise, in a speech of unsurpassed ability and power, convinced, it is believed, every one present that this road ought and must be built; and that its construction is essential to the best interests of North Carolina.

The following gentlemen responded to the call and came forward and subscribed for stock in the road viz:

Governor Morehead,	$10,000
Governor Swain,	10,000
Charles L. Hinton,	10,000
Dr. J. O. Watson,	10,000
William Boylan,	10,000
John D. Hawkins;	10,000
	$60,000

Other gentlemen also came forward and subscribed to the amount of $1,100 more, thus making at this meeting, the respectable amount of $61,100.

Massachusetts.

Boston and Maine Railroad.—Mr. Wilbur, lately a clerk in the Treasurer's office of the Boston and Maine railroad, was, at a meeting of the directors on Monday last, unanimously selected as treasurer of the corporation, in place of Mr. Pickering, resigned. The time at which the new Treasurer will enter upon his duties is fixed at November 1st, but the salary has not yet been agreed upon. Mr. Minot, the superintendent of the road, resigned his office a week or two since, but his successor has not yet been designated.—*Cour.*

Worcester Railroad.—Rumors are rife in the community, in relation to reported speculations among the employers of the Boston and Worcester railroad corporation. The depot master at Boston has resigned, and rumor charges him with a defalcation of some *twenty or thirty* thousand dollars. Other similar chargas are made, but no facts have come to our knowledge to warrant anything more than this brief allusion to the rumors. One thing is certain, that public confidence, owing to some cause or other has received a shock, in relation to this shock, which on Saturday, went as low as 94½, when there can not be a doubt, that under good management it would be worth far more than that in comparison with the prices at which other stock sells.—*Worcester Whig.*

Norfolk County Railroad.—The directors have made arrangements to mortgage the road and franchise for $700,000, and have made Robert G. Shaw, J. Amory Davis, and Charles T. Russel the trustees for that purpose. By this arrangement all the subsequent mortgages and attachments are to be removed, so that the creditors will be enabled to obtain bonds for their debts, as soon as the necessary papers are completed.

Maine.

The Androscoggin Railroad.—Our readers will have noticed that the contracts for the grading and masonry of a portion of this road were advertised a few weeks ago. We learn that the letting of the first fourteen miles has just taken place.

This line is one of much interest, and the enterprise promises to be highly useful and successful—The Road is designed for the accommodation of the immediate valley of the Androscoggin, above Lewiston, and forms a part also of a projected improvement extending to Wilton, Farmington and Philips on the Sandy river. The charter was granted in 1848, and the route then designated commences at a point some miles north of Lewiston, on the Lewiston and Waterville road, and passes upon the east side of the Androscoggin river to Jay Point. At that time, in consequence of other projects, the Legislature did not permit this company to go north of the last mentioned point—but, at the recent session, an extension was authorized, so that this company may now embrace all the interests, as far as the upper portions of the Sandy river valley.

Should the plans thus projected, be realized, this Road will become one of the most important lines in the western part of the State, and will open a country as rich in her natural resources, as can be penetrated by any road of equal extent, in this region. The water power upon the Anroscoggin and its tributaries is very great, and the agricultural reputation of the western part of Kennebec county, and the adjacent portions of Oxford and Franklin—particularly of the Sandy river towns—is universally known.

The contracts just concluded embrace the grading and masonry of the first fourteen miles, beginning at Monmouth. Careful estimates place the extent of this work (exclusive of ballasting) at only about $30,000—showing a remarkably favorable line. This division extends as far as Benjamin's Brook in Livermore. It is expected, as we learn, to contract also at an early day, for grading six miles further to Livermore Falls.

The contract for the first division has been taken by Messrs. Sherrill & Myers of this city. From the ac-

tivity and skill which these gentlemen have displayed in executing contracts in this city, and in completing the work at the Presumpscot bridge for the Atlantic road, the most favorable anticipations may will be entertained of the efficiency and fidelity with which they will carry on this work.—*Advertiser.*

AMERICAN RAILROAD JOURNAL.

Saturday, October 20, 1849.

TO CONTRACTORS.

SEALED PROPOSALS will be received at the office of the James River and Kanawha Company in Richmond, until the 23d day of November next, for the construction of a stone dam across James River at Maiden's Adventure Falls, twenty-eight miles above Richmond.

The dam will be about 1100 feet long and 10 feet high.

The work will be paid for in current Bank notes.—Besides the usual reservation of 20 per cent. on the monthly estimates, the Contractor will be required to give ample security, satisfactory to the Board of Directors, for the completion of the work at the time and in the manner specified in the contract.

Plans of the above work will be exhibited, and specifications thereof delivered to the contractor, at the Company's office in Richmond, by the 5th day of November next, on application to the Secretary of the Company.

WALTER GWYN,
Chief Engineer J. R. & K Co.

Richmond, October 17, 1849.

To Contractors.

Office of the Columbus and Lake Erie R.R. Co.
Newark, Ohio, October 17, 1849.

SEALED Proposals will be received at this Office until the 30th day of November next, for laying 60 *miles* track with H rail (58 to 60 lbs. per yard weight). The work to be commenced immediately, or not later than December 15th.

Also for furnishing the necessary cast iron chairs for the same.

Proposals are invited for cash payments, and also for the whole or any part in the 7 per cent. bonds of the company. Any information desired will be furnished on application to the undersigned.

GEO. W. PENNEY,
Superintendent, etc,

To Contractors.

VIRGINIA & TENNESSEE RAILROAD CO.

PROPOSALS will be received until the 22d day of November next, at the Railroad Office, in Lynchburg, for the Graduation and Masonry of 60 miles of the Virginia and Tennessee Railroad, extending from Lynchburg to Salem. The line traverses a region remarkable for its healthy climate and productive soil.

The character of the work is heavy and worthy the attention of contractors; and it will be let in sections of one mile or larger amounts, to suit the wishes of contractors and interest of the company.

The bids must be addressed to the undersigned, and none will be accepted without satisfactory evidence of the responsibility of the bidder.

By order of the Board of Directors.

CHARLES F. M. GARNETT,
Chief Engineer.

Prospects of the Future.

The completion of the Erie Canal was an era in the progress of New York, and that portion of our country to which it opened the means of a cheap and easy communication with the seaboard. This great work has made New York the Commercial Emporium of this continent, and one of the leading cities of the world. It has brought into existence a constant succession of beautiful and flourishing towns and cities along its line, and the whole country within reach of its influence, has advanced in population, in wealth, in intelligence, in all that constitute the real good of society, in a vastly more rapid rate than has been witnessed in any other portion of the country, distinguished as the whole is, above any other, for its rapid growth. In the blessings it has showered over the land, in the wealth it has created, in the comforts and luxuries it has brought within the reach of myriads, in the mighty change it has wrought in the aspect of a large portion of our country—no public work of a similar kind can present any parallel; results, to the value of which, the cost of the work bears no comparison.

Stimulated by the success of this great work, a large number of the States commenced works of a similar character, without taking into consideration that the causes of this success depended upon conditions which were to be fonnd no where else in this country. No section of equal extent offered such facilities for the construction of a canal, and its completion connected vast inland seas with the ocean. Such have been the obstacles encountered by the other Atlantic States, that Pennsylvania alone has extended her canals to the western waters. Maryland has abandoned the idea of pushing the Chesapeake and Ohio further, and we think it very doubtful whether the James river and Kanawha Canal is carried beyond Buchanan. Since these works were projected, new modes of travel and transportation have been developed, which are fast superceding the use of canals; and those States that sought to rival New York in the construction of canals, in a contest where success was impossible from the very nature of the case, are now seeking to accomplish the same result by the construction of railways. Here is a field where to a certain extent all the States stand on an equal footing.

Pennsylvania is now laying down a railway on the bank of her canal, from Philadelphia to Pittsburgh. Maryland is straining every nerve to push the Baltimore and Ohio railroad to the Ohio river. In the south, the cities of Charleston and Savannah are making every effort, by a line of railway thro' Tennessee, to connect their road with the lower Ohio. In the north, Maine is constructing a road from Portland to Montreal. Boston will soon have a similar connection with the St. Lawrence by the Ogdensburgh railway, and New York, notwithstanding her splendid canal, has been driven by the action of rival States, to commence the construction of a railroad from New York to Buffalo, to protect herself against the public works of other States, a triumphant proof of the superiority of railways over canals.

It is a remarkable fact, that these six great lines of railway, all having similar directions and objects—the three northern seeking the St. Lawrence and the great lakes as their western terminus, and the three southern the Ohio river—will all be completed about the same time. Three years from the present date will undoubtedly witness the completion of the whole. To meet these great trunk lines the inhabitants of the different sections thro' which they will run, are busily engaged in the construction of branch lines to the main trunks, and thus a perfect net work of railways is spreading itself over the Union, which, although at the present time appears to be progressing without any order or unity of design, will, when completed, assume as much order and symmetry as if projected and executed by one controlling mind. In all this apparent chaotic state of things, the laws of trade and the wants of the different sections, are the influences which direct all these movements to results which are as harmonious in their character, as the causes which produced them. When completed, these great roads with their branches, will resemble vast rivers, which, through innumerable feeders, receives the surplus waters of the regions they traverse, and bear them in mighty volume to the ocean.

If the Erie Canal, sectional in its design and influence, gave such an impetus to the business of the country, what results have we not a right to expect from the simultaneous opening of so many vast lines of railway with their numerous branches? At the present time, the cost of transportation of many articles sent to market is greater than the cost of production. Every cent, therefore saved by diminished cost of carriage, is so much added to the wealth of the country. Railroads, therefore, exert as direct an influence in the production of wealth as the soil itself, and they are frequently the only means by which the richest soils can be rendered worth the expense of cultivation. By opening to such lands the means of cheap conveyance to a market, production is stimulated to an extraordinary extent, in sections that would have remained untouhed without such means. The opening of these numerous roads, therefore, will not only in many cases double the value, but it will infinitely increase the amount of agricultural productions. The capacity of the country will apparently be doubled at once. All the various sections of it will receive the same impulse as did New York when the Erie Canal poured into her lap the products of the rich soil of the west. We shall then, and not till then, begin to realize the influence of railways upon the resources of a country situated like our own. They will then exert upon every part of it the same magic effects, in increasing the value of property, as they have done in the limited sphere in which they have been confined.—Added to the impulse we shall receive from the causes enumerated, will be the additional impetus given by the rapid growth of our possessions on the Pacific, and the receipts of gold from that quarter. While the effects of railroads will be to develope the resources of the newer portions of our own country, our vast possessions on the Pacific must for many years receive all the supplies from the Eastern States. For similar reasons, the commerce of that section must be carried on by eastern shipping, thus giving full employment to the industry of the older States. We are soon to commence a new era in the business of the country. The long continued pressure and embarrassment under which the community have been laboring, is the price that it has been paying in advance for the reward that is now opening before us. Courage, then, all classes, for the day that is drawing near will be as bright and lasting as the night has been long and dark.

Georgia

Mimphis Branch Railroad.—We have heretofore omitted this road in our list. It extends from Kingston, on the Western and Atlantic road, to Rome, on the Casa river—a distance of 18 miles. It is laid with a flat bar, weighing 30 tons to the mile, and cost about $6000 per mile. To Kingston, the Coosa is navigable by small class steamboats, which adds materially to the business of this road. C. M. Pennington, Esq., is chief engineer.

SHIP CANAL—LAKE SUPERIOR.

A public meeting has been holden at the Sault Ste. Maria, for the purpose of bringing before Congress the importance of a canal around, or rather *past*, the Falls Ste. Maria, and erecting piers and break waters at certain points on Lake Superior.

That this great work might be properly appreciated, and the great interests involved in its construction properly represented, the meeting appointed three delegates to proceed to Washington at the ensuing session of Congress. The delegates are John W. Allen, D. R McNair and Samuel Ashman.

Ohio.

Columbus and Lake Erie Railroad.—A gentleman connected with this road, writes us as follows:

"We anticipate the completion of our road from Newark to Mansfield early next season.

"About $500,000 stock has been subscribed, and voted by the several counties to be subscribed, to the Scioto and Hocking Valley railroad, extending from Newark via Lancaster, Circleville and Chillicothe, to Portsmouth; and the engineers are surveying and locating the route preparatory to letting contracts.

"A sufficient amount of stock has been subscribed to the Central Ohio railroad or secured beyond a question, to grade the road and furnish the timber for superstructure—from Zanesville via Newark to Columbus. The engineers are in the field preparing the work for letting. The people have generally voted for counties to subscribe stock to railroads at the recent elections."

To the Editor of the American Railroad Journal

DEAR SIR:—Glancing over the last report of the 'Commissioners of Railways" (part 2) I find the following, which I think will prove interesting to some of your readers. Respectfully yours,

L. J. F.

"WATERFORD AND LIMERICK RAILWAY.—(Limerick to Tipperary.

* * * * *

"These bridges are the principal feature in the railway. They have been introduced by Mr. Osborne, the engineer of the line, from the United States, where the principle is of common application in timber structures.

"It is there known as Howe's patent, and is a modifications of Col. Long's trussed bridge. It consists of trusses, between or upon which timber platforms for the roadways are supported, formed each of a top string or chord, as it is termed, of wrought iron with a cap of cast iron, and a bottom chord, entirely of wrought iron, running the whole length of the trusses parallel to one another. These chords are kept apart by cast iron braces and counter braces, crossing each other at angles of 60°, butting at top and bottom against skew backs or wedge-shaped blocks fixed by bolts to the chords; these skew backs are exactly over one another, and a wrought iron bolt passes through them, and by means of a nut and screw on the underside, forces the braces firmly against their respective skew backs.

"The weight coming upon each tension-rod is referred to the braces and counter braces, which, acting in contrary directions against the same skew back, support one another, and which refer their pressures to the adjoining bolt, and the weight is transferred from bolt to bolt through the bridge.—The chords being of wrought iron, receive, and are capable of resisting, the horizontal strains upon them, and the pressure on the cast iron braces, being in the direction of their axis, they are thus placed in the most favorable position.

"I tested these bridges with two locomotive engines, which completely covered them, and found that the deflection produced on the span of 86 feet was 5-16 inch, and on that of 50 feet 3-16 inch.

The strength of the bridge where the parts are of sufficient dimensions depends entirely on the workmanship and materials. * * * *

"The carriages adopted are peculiar, being also introduced from the United States, consisting of a body about 40 feet in length, supported on two bogie frames, one at each end, which are free to turn round spindles, fitting into sockets in the under framing of the body. * * * *

These carriages are well adapted for going round curves, the bogie frames being short and wheels close together, but I think it yet remains to be proved whether they are adapted to very high speeds."

Capt. Simmon's Railway Report.

Boston, October 12, 1849.

To the Editor of the American Railroad Journal:

Sir—Accept our particular thanks for your kind attention to our suggestion under date 1st inst., and for your flattering comments on our city in its railroad enterprises. You suggest one single point of difficulty in the plan of P. P. F. Degrand, viz: "The selection of an enlightened board of directors." We do not perceive why this difficulty should apply to this plan, more than to any other. Indeed, we think it would be less, by the fact of the selection of two-thirds of the directors, with the natural viligance of the owners of the $2,000,000, paid in by private stockholders, added to the vigilance of government, in the selection of the other one-third of the board.

As to the fears which you express, we think that a study of the history and practise of the railroads in N. England will easily dissipate them. That study will convince you that the New England railroads are conducted, as an enlightened shop keeper conducts his shop. The shopkeeper tries to make money, by making himself useful and agreeable to his customers, and accommodating these customers at the lowest rate at which the shopkeeper can make a living profit. Just so do our railroads, and they are enabled to make a living profit, at low rates of freight, by judicious economical arrangements in their own business.

As to the suggestion you make of the importance of paying in a larger amount of private capital, we think you undervalue the mischiefs arising from abstracting this capital from the channels of business.

We wish, however, to be distinctly understood that we are very glad to find every objection to P. P. F. Degrand's plan presented to the public. We move for it, because we think it will stand the test of scrutiny, of talent and of time.

Receive our friendly wishes.

WILLIAM INGALLS,
E. H. DERBY,
JAMES C. DUNN,
S. S. LITTLEHALE,
P. P. F. DEGRAND,
REBERT F. FISK,
O. D. ASHLEY,
} Committee.

CANADA.

Quebec and Melbourne Railroad.—A meeting, numerously attended by all classes and parties of the citizens of Quebec was held on Thursday last, in the Quebec City Hall. His Worship the Mayor in the chair. A perfect feeling of unanimity prevailed throughout the whole discussion prior to the passing of resolutions to carry out the project. The Quebec morning Chronicle says:

"There was just opposition enough to show that even those who were opposed to the advance of £100,000 were convinced that the railroad would pay, and that opposition was only because it was jealously supposed one part of the country would reap even greater benefit than another."

In the course of his speech, J. B. Forsyth, Esq., observed that from his acquaintance with the topographical nature of the country between Quebec and Melbourn, the abundance of timber, cheap labor, and small cost of land for right of way, he felt certain the road could be made for from £3,500 to £5,000 per mile. The road from Montreal to Portland cost fully 40 per cent over that estimate, as large embankments, and extensive bridging will have to be made; whereas the country from the St. Lawrence to Melbourne is flat and level, and is represented as highly favorable for the line contemplated. He stated that Mr. Patterson, of Montmorency, had authorized him to subscribe for £1000 of stock and he had no doubt the British American Land Company would become largely interested, as well as the Seigneurs of St. Croix De Lotbin ere, and proprietors of lands in the townships; and that the Legislature as proprietor of the Seigniory of Lauzon, would come forward with an open hand.

John Jones, Esq. was in favor of the road, but tho't it expedient to know the cost of it, and that the cheap plan should be decided upon.

Dr Morrin was not opposed to the construction of a road from Quebec to Melbourne, but was not prepared to say that he approved of the city being taxed £100,000 for the sake of the Pointe Levi, which place would by the construction of a railroad, be made a town, and receive infinitely more benefit from the undertaking than Quebec. He had no objection that 25,000 or £30,000 should be granted.

Several other gentlemen spoke strongly in favor of the project.

A set of favorable resolutions were then adopted, a committee formed, and the following stock immediately taken up:

P. Patterson, Esq.,	100 shares,	£1250
W. J. C. Benson, Esq.,	80 shares,	1000
J. Jones, Esq,	40 shares,	500
H. Noad, Esq.,	10 shares,	125
W. S. Henderson,	5 shares;	62 10

—*Mont. Transcript.*

Pacific Railway--St. Louis Convention.

We give the proceedings of this convention as reported by telegraph to the city papers. A gentleman attended the convention on behalf of the Journal, from whom we hope soon to have a full report of its proceedings.

ST. LOUIS, Tuesday, Oct. 16.

The convention assembled at 12 o'clock yesterday and was organized by the appointment of Judge Lewis of Vincennes, Ia. as temporary chairman.—A committee of one from each State was appointed to designate officers of the convention, after which a motion was made to adjourn until 9 o'clock this morning, and carried.

SECOND DAY.

ST. LOUIS, Tuesday, Oct. 16.

The convention reassembled at 9 A. M. with a very full attendance. The committee, pursuant to adjournment, reported as permanent officers of the convention the following named gentlemen: President, Senator Samuel A. Douglass of Ill., Vice Presidents, L. Totten of Penn., S. Foster of Ohio, Samuel Emerson of Ind., H. J. Eastin of Ky., J. Williams of Iowa, C. Branker of Wis., Henry S. Greer of M., J. Riddle of Mich., H. K. Williams of N.Y. and Bryce Steward of Tenn.; Secretaries, M. G. Miron and A. B. Williams of Mo., A. S. Stewart of Ill. and H. W. H. Wallace of Iowa.

Hon. S. A. Douglass, President, after being conducted to the chair delivered a short but eloquent speech. There was much discussion on a motion from the chair to appoint a committee on resolutions. The motion was finally carried, and the chair appointed three from each State. The resolution having been introduced calling on Congress to act promptly in regard to the Pacific railroad, Mr. Benton rose and read a letter which has just been received from Col. Fremont, stating that the convention should designate no route across the rocky mountains. He believed the pass between the head of the Arkansas and the Rio Del Norte, the most practicable and nearest to the Pacific. General Persifer F. Smith has sent an exploring party with a view to report before the termination of the next Congress.

He (Mr. Benton) dwelt long and eloquently on the importance and nationality of the road. During his speech he was repeatedly and louly cheered. Four hundred and sixty four delegates were present, of whom seventeen were from Missouri, three from Pennsylvania, twenty from New York, thirteen from Ohio, thirty one from Tennessee, three from Indiana, two hundred and sixty four from Kentucky, forty seven from Illinois, three from Iowa,—from Wisconsin, and five from Michigan. A recess was here taken.

On reassembling, Mr. Lathrop was admitted as a Vice-President. A Delegate from Louisiana offered a resolution, which was passed, that a committee of one be appointed from each State, to draft a memorial to Congress, in which should be presented the objects designed by the convention. Judge Birch here presented a resolution, recommending the 38 parallel of latitude as the best route for the railroad. He was replied to by Gov. King of Mo. who spoke in a warm and stirring manner. The project being opposed to that of Benton, a political division of Loco Focos was here manifested. Mr. Clark of Mo. interfered to quell the dispute, and words followed in a most formidable manner, by Judge Williams.

On motion of Mr. Lathrop of La. the resolution was laid on the table. Order being temporally restored, letters from several distinguished persons from various parts of the Union were ordered to be printed. The report of the topographical engineers, as to the various routes for the railroad, was referred to a committee.

Hon. Mr. Douglass having resigned the chair, Henry S. Greer of Mo. was appointed in his place. He subsequently withdrew, and Mr. Darsie of Penn. was appointed in his place. The committee on resolutions reported a series of resolutions for consideration, setting forth the object and spirit of the convention as truly national, and observing neither party, sectional or local interests, and recommending Congress to make immediate provision for the construction of a great trunk road to the Pacific, in California, with a branch to Oregon, from some point on the Mississippi, or frontier, as may be found eligible. All the Eastern lines now tending toward the West may be considered parts of the same. Also that Congress establish military posts for the protection of settlers and emigrants, and that grants of land be made encouraging population, and that Congress be memoralized to construct a Telegraph on the road, and that a committee of five be appointed to prepare and publish an address to the people of the Union, urging the Corporation to procure the action of Congress.

Hon. J. W. Thompson of Ind. addressed the convention in an able and eloquent manner, and offered the following amendment: That the grand trunk railroad be constructed with branches to St. Louis, Memphis and Chicago, and that a committee of fifty be sent to the Memphis convention, requesting the corporation of that body.

THIRD DAY.

St. Louis, Wednesday, Oct. 17.

The Virginia and New Jersey delegates to the convention have arrived—Lieut. Morie of Va., and Robert Chambers of N. J. are announced as Vice-Presidents from those States. Various resolutions touching the route for the road were referred to the committee on resolutions.

A flare-up here occurred, on account of a resolution being introduced that congress be memorialized to favor the immediate commencement of the road at a point west of the organized States, to be continued to San Francisco. Senator Smith, of Indiana, opposed the resolution in a speech of an hour, setting forth the impracticability of the resolution. He said if it was unconstitutional for Congress to authorize the construction of the whole road, it should be memorialized to amend so as to meet the objection in view.

Mr. Greer of Missouri was again installed President of the convention. Mr. Douglass is now speaking in reply to Mr. Smith of Indiana. The road west of the organized States will be completed within ten years.

St. Louis, Oct. 18.

The Pacific Railway Convention adjourned at noon to-day, after acopting a resolution to re-assemble at Philadelphia on the first of April next, to resume the consideration of the subject.

Senator Benton is to address the citizens of St. Louis to-night.

To the Editor of the American Railroad Journal.

Atlantic and Pacific Railroad.

There has been so much said and written on the above subject, as to render it almost impossible to get the majority of the people of the United States agreed to any definite plan of operations, in regard to the same. All the projects as yet suggested, of which there are several, have warm advocates and opponents, which must be expected in all human projects of so vast magnitude.

Let me suggest, through your columns, that said undertaking will probably never be commenced and finished as a whole, it being too great an undertaking for a single enterprise. The only possible way to accomplish said desirable project, in the opinion of the writer, will be for the State of Iowa or Missouri to charter and construct a railroad from East to West across their confines, and when Nebraska shall be organized as a territory, or independent State, together with New Mexico, California, etc., let them continue the chain westward, until the Atlantic and Pacific Oceans shall be connected by several great links, forming altogether a magnificent line of about 3,000 miles of railroad.

At either end may, and will be lines diverging to the different ports on both oceans—thus forming an union of interest which no rival or local predjudice can destroy—the interest and good of the whole Union being bound together by one great

Road of Iron.

The Legislature of Vermont are to have a deal of railroad legislation before them at their present session. Among the published applications are the following:

For a railroad from Burlington to the Canada line—from Montpelier to Wells river, or near Haverhill, N.H.—from some point on the Connecticut river convenient to connect with New Hampshire roads to the Rutland and Burlington road in Chester or Cavendish—from Weathersfield four corners (or near there, connecting with the New Hampshire Central road,) thence through Weathersfield and Cavendish to the Rutland and Burlington railroad—from West Poultney through Wells, Pawlet, and Rupert, to connect with the Troy and Rutland railroad. Also to revise the charter of the Western Vermont railroad company, and for an amendment of the charter of the Rutland and Washington company.

A railroad case of some local importance—being a question of right on the part of the prosecutors of the Rutland and Whitehall railroad to build a road in opposition to that of the Rutland and Washington company—was to come before the U. S. Circuit Court at Rutland last week.

Alabama.

Mobile and Ohio Railroad.—Messrs. Riddle and Co., contractors for grubbing, grading, etc., of sections 16 to 23 of the Mobile and Ohio railroad, broke ground on Monday last. One hundred men are now at work, and as tools and implements are received the force will be increased. This is the beginning of a work, which, when completed, will make Mobile, what we all desire to see, the second city at least on the Gulf.—*Mobile Tribune, 20th.*

Pennsylvania.

The Philadelphia North American says that the Pennsylvania railroad company have concluded an arrangement with the Harrisburgh and Lancaster railroad company by which the cars of the former will also run upon the road of the latter. Passengers and freight can now be conveyed the entire distance without change or transhipment.

Iron Manufacture.

The following is a description of a new process for the production of iron.

There has just gone into operation at Booneton, N. J., a triple chamber, the invention of Mr. S. S. Salters, of Newark, into the upper chamber of which good iron ore (any of which does not turn out a great deal of slag) and anthracite coal, pulverized and mixed, are placed, and, fire being applied, the coal is consumed and the ore melted; whereupon it is allowed to descend into the next, (but not exposed to the air at any time,) and finally drawn off at the bottom, fully transformed into Malleable wrought iron or blooms, ready to be rolled or hammered as may be desired. It is asserted by the patentees that good wrought iron, such as would now command $45 in this market, can be manufactured by this process at $30 per ton. Some very fine samples of this iron are now on exhibition at the fair.

New Hampshire.

New Hampshire Central Railroad.—Directors for the ensuing year:—David Steele, of Goffstown, President; Moses A Hodgdon, and Moses Sawyer, of Weare; Horace Childs, of Henniker; Perry Richards of New Boston; Bartholomew Smith of Bradford, and George W. Pinkerton, of Manchester.—Sainuel H. Price, Agent. The reports presented an encouraging account of the progress and prospects of the enterprise. The work is more than three-fourths done on the entire line from Manchester to Henniker. About sixteen miles of the road will be opened for travel this fall, and to Henniker early next season. The cost from Manchester to Henniker, including the rails and bridge across the Merrimack, comes within $15,000 per mile. The bridge cost less than 26,000 dollars.

Gold in Indiana

Gold is known to exist in Morgan county, Indiana. The particles of the precious metal are founn in the soil, from which they are separated by washing. The largest piece which was yet found weighed a pennyweight and a third. The particles are generally very small, and do not weigh over the thirtieth of a grain. They are scattered everywhere through out the tract of country. Where the most abound, two qearts of earth yield from twenty to fifty particles.

NEW-LONDON, WILLMANTIC AND PALMER RAILROAD.

This Railroad, extending 62½ miles from the harbor of New London on Long Island Sound, to Palmer, on the Massachusetts Western Railroad, 15 miles east of Springfield, is rapidly approaching completion, and finishes the series of Railroads running north and south through the natural valleys into which the State of Connecticut is divided, namely:

1. The *Housatonic Valley;* traversed by the Housatonic Railroad, from Bridgeport to West Stockbridge, (95 miles.)
2. The *Naugatuc Valley;* traversed by the Naugatuc Railroad from Stratford on Long Island Sound, north to some point on the Western Railroad, (about 50 miles opened.)
3. The *Farmington Valley,* in which is located the Canal Railroad, from New-Haven north, crossing the Western Railroad, to Northampton, Mass.—31 miles opened.
4. The *Connecticut River Valley,* traversed by the New-Haven and Hartford, and Springfield Railroads, from New Haven to Springfield, Mass.—60 miles.
5. The *Thames and Willimantic Valleys,* traversed by the New London Willimantic and Palmer Railroad, extending from New London via Williamantic, to Palmer, on the Western Railroad—62½ miles.
6. The *Quinnebaug Valley,* traversed by the Norwich and Worcester Railroad, which extends from Allyn's Point, on the River Thames, 7 miles below Norwich, to Worcester, Mass.—66 miles.

The total length of these Railroads, when all are extended to the Massachusetts Western Railroad, will exceed 420 miles, and their whole cost will be $10,000,000.

The New London Railroad, was chartered in May, 1847; the line put under contract in 1848, and the work commenced in August of the same year. It has been carried forward with great success and economy, and is now so far competed that cars will be run on the road from New London to Norwich (12 miles) before the 1st of Novemter ensuing; to Williamantic (28 miles from New London) on or before the 1st of December, and to Stafford Springs, near the north line of the State, about the 1st of January, 1850—leaving about 16 miles to the Palmer depot, to be completed early next Summer.

The estimated cost of the Railroad and equipments was $1,182,000, but in consequence of a saving of $150,000 on the estimated cost of the iron rails, and advantageous contracts, the Directors contemplate keeping the total cost of the work below $1,000,000, or a little over $16,000 per mile; while the average cost of teh of the cheapest Railroads hitherto constructed in New England has been over $35,500 per mile.

The New London Railroad will connect at Willimantic, manufacturing borough, with the Hartford, Providence and Fishkill Railroad, which will be completed from East Hartford to Williamantic, as we are informed, before the 1st of December next, thus opening the facilities of Railroad communcation to New London, Norwich and other sections of the eastern part of Connecticut with Hartford, New-Haven and New York; beside furnishing the most convenient route to Albany, Troy and the West, and affording to many now sequestered towns the same advantages which have been enjoyed by larger cities and towns on the most favored routs.

At Norwich Landing the New London and Palmer and the Norwich and Worcester Railroads are located within a quarter of a mile of each other, and and it is thought by those interested that the mutual interest of both Companies will soon cause a junction of the roads to be constructed at that city.

The general valley in which the New London

Railroad is located is well defined by natural boundaries—namely the ranges of mountains and hills on the east and west. The western range extends from Cobalt Hill, near Middletown, to the interior of the State of Massachusetts. The eastern range is somewhat broken, and extends from the bluffs at Norwich to Mount Adams, also in Massachusetts. The immediate region thus bounded is the channel through which several rivers flow to the oceans. These with their tributaries, furnish a large amount of water power. This Railroad connects the great northern and central valleys of New England with New London, the only feasible ship harbor in the State of Connecticut—a harbor not surpassed in magnitude, ease of access in all seasons, depth of water and safe anchorage, by any harbor in the Northern States.

The work owes its origin, progress and flattering prospects mainly to the enterprise of the people of New London, and will add greatly to the convenience of the traveling and business public, as well as aid in farther developing the resources of an interesting section of New England.—*N. Y. Tribune.*

The Late Accident at the Britannia Bridge.

At the request of Mr. Webster, Mr. Robert Stephenson, gave a brief account of the accident to the hydraulyc press which lifts the tube at the bridge across the Menai Straits. He proceeded to explain the precautions that had been taken to avoid the consequences of any accident. It was originally intended that the tube should be lifted 6 feet, that a link should then have been taken off, and the space built up. This was happily not carried out, and such was the care taken, that as the tube rose, men were stealing in, so to speak, small planks of timber. But for these precautions the fall would have been fatal to the whole structure, for as it was, it fractured bearers of cast-iron upwards of 500 tons weight. The tube was never for a moment suspended in air, and he had since taken the additional precaution of packing the space between the cross-heads and the pump with small iron wedges. No accident could now take place. The fracture in the cylinder occurred in what might have been considered the very strongest place. The pressure at the time was no more than 3¼ tons to the square inch, no means an unusual pressure. As connected with the cause of the accident, he might state that a short time previously, when the presses on both ends were working simultaneously, it was remarked that the tube had a strange tremulous motion along its whole surface. In a short time it increased, until the vibration assumed the character of a short wave. At every action of the pump the whole mass seemed to acquire a state of pulsation, comparable to nothing but the pulse of a man's arm. The presses were stopped and since they have only been worked at one end With respect to the immediate cause of the accident, he might state that the shape of the cylinder-sqnare was not the best, and no doubt the weakness had arisen from unequal cooling. Only one of the presses was at work when the accident occurred.—Dr. Robinson, in moving the thanks of the meeting to the President, remarked upon the singular fact of the vibration spoken of by Mr. Stephenson. He (Dr. Robertson) presumed that the motion in the end of the tube being raised, was reflected from the fixed end, and hence the vibration.—Mr. Stephenson said that the fact of his having allowed the damaged cylinder to be used after he knew it was faulty had been strongly commented upon. In answer to that accusation of indiscretion, he begged to state that the fault lay in the collar of the casting, where no pressure came.—Mr. Roberts, remarked that the way to obviate vibration was to work the engines at unequal speed. He considered that the shape of the casting was bad, and the mode of casting also not the best. It would greatly improve the strength of such work if spiral casting were to be adopted; that is, to pass the metal into the mould in a spiral direction.—Prof. Willis and Mr. Webster, followed with some remarks on the interesting subject of vibration; the latter gentleman considering that the pulsation spoken of might have had some influence in causeing the fracture. There might be a conspiration of vibration in the tube and the press which would destroy the cohesion in the particles of the metal, and cause the tracture. After few other conversational remarks from Mr. Eaton Hodgkinson and others, the subject dropped.—*Mining Journal.*

To the Editor of the American Railroad Journal.

Lonaconing Oct. 10, 1849.

Sir—The apparent anomaly of the greater density of fluid cast iron over the same iron when in the solid state, referred to in the letter from N. M. Stratton, to Horatio Allen, Esq., published in your No. 38, is fully susceptible of explanation.

When crude iron is exposed to a high temperature, it follows the same invariable law of expansion as other bodies, until it reaches a degree of heat (generally estimated a little below 3000° Fahrenheit,) when its crystaline structure is destroyed and when it passes into a fluid state—at that moment it changes from a state of its greatest expansion into a state of greatest density. In that state of fusion solid crude iron of the same quality will float upon it, but not until by the heat of the melted iron the solid piece has been greatly expanded; cold iron will sink at first.

At the moment of solidification of fluid cast iron it assumes a *crystaline structure*, and therefore expands, the same as water when it freezes into ice, a circumstance familiar to every one. Bismuth, zinc and sulphur are possessed of the same quality, and it is just this quality that makes crude iron so applicable and valuable for castings—inasmuch as by this momentary expansion, at the instant of solidification, it fills all the forms and minutest impressions of the mould. Having done this in the act of crystalization then the ordinary law of contraction by diminution of temperature comes into action and causes the diminution of bulk or shrinkage, which relates however not to the iron in the fluid state, but only to the iron at the *moment of solidification or crystalization* when it has its greatest bulk or expansion. C. E. Detmold.

Ship Building in New York.

The amount of tonnage launched from the various yards of New York city and its suburbs, since 1st of January last, or now on the stocks:

	Tonnage Launched.	Tonnage on Stocks.
Total	20,251	28,960
" for the whole year ending Jan. 1st, 1848	36,649	15,710
" for the whole year ending January 1st, 1847	39,718	29,870

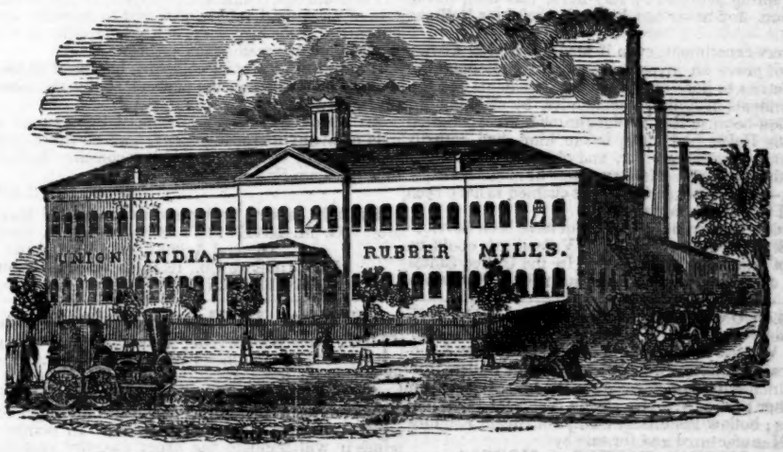
—showing a fair amount of tonnage on the stocks, (a large proportion of which will come off before January next,) especially as contrasted with last year, when the shipping interest suffered a very apparent collapse from the heavy freighting business of the year of the European famine, and consequently but little disposition to build was manifested.

The above enumerated vessels may be recapitulated in the following synopsis of the classes:—

	Steamships.	Steamboats.	Ships.	Barks.	Schooners.	Ferry Boats.	Barge.
Launched	2	6	9	2	3	6	
On Stocks	3	5	12	1			1
	5	11	21	6	3	6	1

Making a total of fifty vessels, the value of which is not far from three millions and three hundred thousand dollars. It is noticible that a more than usual number of the larger class are constructed with 3 decks, which may be attributed to the passenger law of 1847, regulating the number of passengers by a vessel's measurement, and not by her tonnage. Each individual is allowed by this fourteen superficial feet, so that by slightly increasing the depth of hold, a third deck is added, and an increase of capacity for passenger carriage given her far exceeding the increased custom house measurement.—*N. Y. Jour. of Com.*

☞ HEAD QUARTERS FOR RUBBER GOODS. ☜



The Union India Rubber Company,

MANUFACTURERS AND DEALERS IN EVERY VARIETY OF

GOODYEAR'S PATENT METALLIC RUBBER FABRICS,

Which they offer on the most liberal terms at their Warehouse,

NO. 19 NASSAU STREET, NEW YORK.

Articles which this Company has the exclusive right to make comprise in part

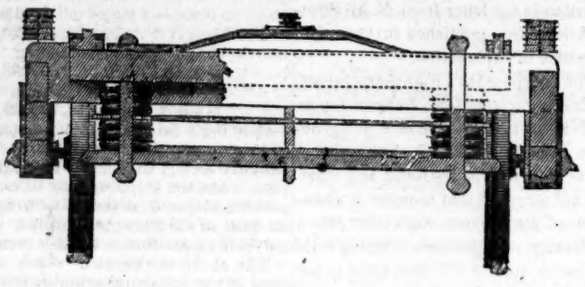
Beds,	Overcoats,	Life Preservers,	Mail Bags,	Camp Blankets,
Pillows,	Leggins,	Boat Floats,	Breast Pumps,	Travelling Bags,
Cushions,	Syringes,	Souwesters,	Saddle Bags,	Wading Boots,
Caps,	Canteens,	Gun Cases,	Clothing of all kinds,	Horse Covers,
Tents,	Buoys,	Portable Boats,	Carriage Cloth, assor.	Piano Forte Covers,
Bottles,	Maps,	Horse Fenders,	Hospital Sheeting,	Railroad Gum,
Tubs,	Sheet Gum,	Water Tanks,	Mattrass Covers,	Hose, all kinds,
Caps,	Tarpaulins,	Army Goods,	Bathing Caps,	Shower Baths,
Pants,	Life Jackets,	Navy Goods,	Baptismal Pants,	Chest Expanders.

Together with *all new applications of the Patent Rubber*, which with Boots and Shoes, Packing, Machine Belting, Suspenders, Gloves and Mittins, Tobacco Wallets, Balls, Baby Jumpers, Elastic Bands, etc., etc., will be sold to the Trade at Factory prices.

*** All orders for special articles to be manufactured, should be accopanied with full descriptions and drawings.

October 20, 1849.

FULLER'S PATENT
INDIA RUBBER CAR SPRINGS.



RAILROAD COMPANIES are cautioned, before purchasing Springs, to examine the actual patents and judge for themselves.

Persons, under the Title of the New England Car Company, seeking fraudulently to invade Fuller's rights have put forth so many statements for the purpose of misleading the public, that an enumeration of some facts is absolutely necessary, for the purpose of putting persons interested upon their guard.

Fuller's patent is for the application of Discs of India-rubber with Metal Plates, for forming Springs for Railway Cars and Carriages—either one disc and two plates, or ten discs and plates, or any other number, are equally covered by the patent. Fuller is not bound to the use of short discs—he may use long discs and plates.

Ray's patent is simply and wholly the forming of air tight rubber cylinders, with hoops or bands round the outside, and the combination of elasticity of India rubber, with the elasticity of atmospheric air confined in the cylinder, and in no part of his patent is he authorised to use the form of spring which he is now fraudulently supplying to Railroad Companies. Such springs are direct and positive infringements of the very letter of Fuller's patent.

Fuller's patent is dated October, 1845, Ray's patent, August, 1848.

The spring patented by Ray never has been put in operation, and never can be made useful for Railroad cars.

A mere experiment, even if made, it is well known does not prove an invention; and it is ridiculous for such parties to hope to mislead the Presidents and Superintendents of Railroad companies, by claiming the invention because Ray alledges he made an experiment—which Fuller had made before him—had actually brought into working order, and obtained a patent for—and this too before Mr. Ray states he made his experiment—and that experiment not claimed to have been applied to a car or carriage.

Besides, the invention could not have been developed until India rubber, properly Vulcanised, could be made of a sufficient thickness. In the United States the art of vulcanising rubber by steam heat, (by which means only can a body of rubber having any considerable thickness be vulcanised,) was not introduced until after the grant by the American government of the patent for springs to Fuller—whereas the process of vulcanising rubber by steam heat was invented in England about three years previously, and was used by Fuller there. This fact refutes entirely the claim of invention put forth by Mr. Ray, and proves the impossibility of his pretensions being true.

Fuller was the first and only inventor of the spring. A Mr. Dorr, whose connection with Mr. Goodyear is well known in this country, applied in England to Mr. Fuller, after he had published and patented his invention, and introduced another party for the purpose of obtaining the agency for the United States. They were furnished with a complete set of drawings and models, and with instructions to make arrangements for the supply of material of American manufacture—from that hour to the present not a single communication has been received from them. Some of these identical models have been traced into the hands of parties now seeking to invade Fuller's rights, and who have exhibited them as specimens of their own invention.

After this, the conveyance was made by Goodyear to certain parties here for the use for railroad springs of what he calls his Metallic rubber. Comment is unnecessary.

There are 5 or 6 different processes for the manufacture of vulcanised rubber, patented by as many different parties, some here, some in England, either of which would probably make good springs.

A large and powerful company has been organised under Fuller's patent, the particulars of which shall be given very shortly.

An action has been commenced against one railroad company for infringement; and all other parties will assuredly be prosecuted if they continue farther to infringe upon Fuller's patent.

W. C. FULLER,

The only persons authorised to supply the Springs are G. M. KNEVITT, 38 Broadway, N. York, General Agent for the U. S.: and JAS. LEE & Co., 18 India Wharf, Boston. JOHN THORNLEY, Chestnut st., Philad.

TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by

MORRIS, TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut streets,
Philadelphia.

The New York Iron Bridge Co.

LATELY KNOWN AS
Rider's Patent Iron Bridge Co.

THE Company which has hitherto furnished these Bridges, under the patent granted to the late Nathaniel Rider, deceased, have become satisfied that all the principles embraced in their construction, are included in a previous patent, granted in the year 1839, to Col. Stephen H. Long, of U. S. Engineers, and by him designated as "Long's Suspension Bridges," and have therefore made an arrangement with Col. Long, by which they have secured the exclusive right to make and vend these Bridges throughout the whole United States.

The only change consequent upon the new arrangement will be found in the name and style of the Company. The parties composing it being the same, the construction of the Bridges will be essentially the same.

August 4th, 1849. M. M. White, Agent,
au7tf No. 74 Broadway, New York.

Steam Boiler Explosions.

THE Subscriber having been appointed sole Agent for Faber's Magnetic Water Gauge, is now ready to supply the trade, and also individuals with this celebrated instrument. Besides the greatest safety from explosion resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow off." Pamphlets containing full information, can be had free on application to the Agent,

JOSEPH P. PIRSSON,
Civil Engineer, 5 Wall st.

Railroad Iron.

1600 Tons, weighing 60½ lbs. per yard.
185 " " 57½ "
580 " " 53 "

of the lafest and most approved patterns. For sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Oct. 13, 1849.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

RAILROAD
India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.

May 24, 1849.

Devlan's Machinery Oil.

THE Subscribers, Agents for P. S. Devlan & Co's "Patent Lubricating Oil"—price 80c. per gallon 4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Norris Brothers, in whose works, any one by calling can see the oil in use and judge for themselves.

NORRIS' LOCOMOTIVE WORKS.
Philadelphia, April 2, 1849.

We have been using throughout our Works, during the last six weeks, "Devlan's Lubricating Oil," and so far as we have been able to judge from its use, we think it preferable to the sperm oil generally used, for both heavy and light bearings. NORRIS, BROTHERS.

For sale by ALLEN & NEEDLES,
22 & 23 South Wharves,
14tf Philadelphia Pa.

NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by

E. S. NORRIS.

April 11, 1849.

Engine and Car Works,
PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery. HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Bancks, C. W.,
Engineer's Office, Southern Railroad, Jackson, Miss.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Walter R. Johnson,
CIVIL AND NINING ENGINEER AND ATtorney for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY., N. Y.

Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.
May 26, 1849.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Hudson River Foundry,
THOMAS & COLLINS,
130 Quay Street, Albany.

To Railroad & Navigation Cos.
MR. M. BUTT HEWSON, *Civil Engineer*, offers his services to Companies about to carry out the surveys or works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.
Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

J. T. Hodge,
Eagle River P. O. Lake Superior.

James Laurie, *Civil Engineer,*
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,
Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.
May 16, 1849.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED —'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

IRON.

Railroad Iron.
THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.
They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.
March 29 1849. 3m.13

Glendon Refined Iron.
Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore Md.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.
These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York.

Railroad Iron.
THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,
February 3, 1849. New York.

Iron Store.
THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.
THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron.
THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.
Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to

COOPER & HEWITT, *Agents.*
17 Burling Slip, New York.

October 30, 1848.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150 tons No. 1 Boonton Foundry Pig Iron.
100 " No. 2 do. do. do.
300 " Nos. 2 & 3 Forge do. do.
100 " No. 2 Glendon do. do.
140 " Nos. 2 & 3 Lehigh Crane do do.
100 " No. 1 Pompton Charcoal do.
100 " New-Jersey Blooms
50 " New-Jersey Faggoting Iron, for shafts

Best Bars, ¼ to 4 inch by ¼ to 1 inch thick.
Do do Rounds and Squares, ⅝ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ⅝ to 1¼ in.
Bands, 1¼ to 4 inch. Hoops, ⅝ to 2 inch.
Trunk Hoops, ⅝ to 1¼ in. Horse Shoe & Nut Iron.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

Railroad Iron.

THE Undersigned have on hand, ready for immediate delivery, various patterns of Iron Rails, of best English make, and manufactured in conformity with special specifications.

They offer also to import and contract to deliver ahead—on favorable terms.

DAVIS, BROOKS, & CO.,
68 Broad street.

New York, Oct. 11, 1849.

☞ Drawings and Patterns of the most approved Rail—and specifications of quality and make of same, are on hand at their office, for examination of parties who may desire to inspect the same. D., B. & Co.

Oct. 11, 1849.

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by

JOHN A. ROEBLING, *Civil Engineer,*
Pittsburgh, Pa.

These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent,*
Albany Iron and Nail Works.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP

In complete operation, are prepared to execute faithfully and promptly, orders for

Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞ Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.
Worcester, Mass., May 25, 1849.

American and Foreign Iron.

FOR SALE,

300 Tons A 1, Iron Dale Foundry Iron.
100 " 1, " " "
100 " 2, " " "
100 " " Forge "
400 " Wilkesbarre " "
100 " "Roaring Run" Foundry Iron.
300 " Fort " "
50 " Catoctin " "
250 " Chikiswalungo " "
50 " "Columbia" "chilling" iron, a very superior article for car wheels.
75 " "Columbia" refined boiler blooms.
30 " 1 x ¼ Slit iron.
50 " Best Penna. boiler iron.
50 " "Puddled" "
50 " Bagnall & Sons refined bar iron.
50 " Common bar iron.

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
New York. 64 South street

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale, *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1½ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, *Patentee.*

☞ These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

WILLIAM JESSOP & SONS'

CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

FRANKLIN TOWNSEND & CO.
Albany, August 18, 1849,

Norwich Car Factory,

NORWICH, CONNECTICUT,

AT the head of navigation on the River *Thames*, and on the line of the *Norwich & Worcester Railroad*, established for the manufactory of

RAILROAD CARS,

OF EVERY DESCRIPTION, VIZ:

PASSENGER, FREIGHT AND HAND CARS,

ALSO, VARIOUS KINDS OF

ENGINE TENDERS AND SNOW PLOUGHS.

TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

☞ Any communication addressed to

JAMES D. MOWRY,
General Agent,
Norwich, Conn.,

Will meet with immediate attention. 1y8

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS

OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by

H. B. TEBBETTS,
No. 5½ Pine St., New York.

May 12, 1849. 1m19

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT,
cor. Steuben and Water sts. Albany.
August 24, 1848.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,
Prest. Beaver Meadow Railroad & Coal Co.,
Philadelphia.
or, L. CHAMBERLAIN, Sec'y,
at Beaver Meadow, Pa.
May 19, 1849. 20tf

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 4 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS,
Reading, Pa.

To Steam Engine Builders.

THE Undersigned offer for sale, *at less than half its cost*, the following *new machinery*, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz:

2 Wrought Iron Cranks, 60 inches from centre to centre.
1 Do. do. Connecting Rod Strap.
2 Do. do. Crank Pins.
1 Eccentric Strap.
1 Diagonal Link with Brasses.
1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,
No. 57 South Gay St., Baltimore, Md.
Sept. 12, 1849.

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and *warranted to perform well.* Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price $1,500.

Address J. B. MOORHEAD,
Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.
September 6, 1849.

Utica French Burr Mill Stone Manufactory.

THE undersigned, successors to Messrs. M. Hart and Son, in the above establishment, are now prepared to furnish French Burr Mill Stones of best quality and greatly improved workmanship and finish, together with best quality Bolting Cloths, Screen Wire, Hoisting Screws, Lighter Screws, Dansells and Mill Pecks.

Our Mr. Munson who is a practical Miller and Mill Wright, has recently invented and patented a machine on which the Mill Stone, after it is blocked up, is suspended upon its centre, where it is balanced in the course of filling up and finishing, instead of filling up the same without the means of testing the accuracy of its balance, leaving that to be done by the Mill Wright (as is usually the case) in hanging the Stone for actual use in the mill.

In order that the great superiority of Mill Stones finished in this way over all others, may be seen at once, a brief description of the machine and manner of finishing, is herewith given.

An important part of the machine is a heavy circular face plate, which is hung and balanced on a pivot or spindle. This plate has a flange near the outer edge on the under side, which rests on four friction rollers, so that when put in motion it runs perfectly smooth and true, around the opening or eye in the centre of the plate there is raised a flange which receives a hollow cone for forming the eye of the stone. This cone stands perfectly true with the plate, which plate is raised or lowered with a lighter screw. The mean being here afforded as described of raising the stone free from the friction rollers and holding it suspended on the spindle or cock-head, and in that condition observing its balance when at rest or by application of motive power, communicating to the stone a swift motion, and in that condition by observing its balance it can very accurately be ascertained which side of the stone preponderates and where to apply the heaviest filling. This test is strictly observed until the necessary thickness is obtained. When the filling is completed a coat of plaster is put on and the top is nicely turned off, and the stone is complete. During the whole process the means are afforded of testing its balance both at rest and in motion. So that when the process of construction is complete and the mill stone finished, it is not only constructed otherwise favorable to the perfection of the stone, but the stone is also throughly balanced.

All of our stock will be selected and manufactured under the direction and superintendence of our Mr. Munson, which together with his loug experience in the business will be a sufficient guaranty that the high reputation of this establishment will be fully sustained.

Confident that we can offer greater inducements to purchasers of Mill Stones, Bolting Cloths etc., than any other establishment in this country, a share of public patronage is respectfully solicited.

HART & MUNSON,
Utica N. Y. Sep. 1849.

PATENT INDIA RUBBER STEAM PACKING. This article has been sufficiently long in use to prove its superiority over every other article. A complete assortment of the various descriptions and sizes suitable for Marine Locomotive and Stationery Engines; Boilers, Steam pipes, Ship joints; Valve stem and Piston rod boxes; Piston and Air Pumps; delivery and foot valves, &c., &c., constantly on hand, and for sale, in quantities to suit applicants by the manufacturer and patentee, who will give every information regarding its properties, mode of use, &c., &c., at the warehouse, 98 Broadway.

JOHN GREACEN, JR.,
Opposite Trinity Church Yard.

C. W. Bentley & Co,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Balttmore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,
Baltimore, June 6, 1849.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,

SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.
Philadelphia, June 16, 1849. 1y25

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the *parallel ruler, plane scales* and *protractor.*

2d. Examples for drawing *plans, sections* and *elevations* of Buildings and Machinery, the mode of drawing elevations from *circular* and *polygonal* plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to *Isometrical drawing*, with 4 plates of examples.

4th. A treatise on *Linear Perspective*, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows.

The whole illustrated with 50 STEEL PLATES.
Published by WM. MINIFIE & CO.,
114 Baltimore St., Baltimore, Md.
Price $3. to be had of all the principal booksellers.

To Engineers and Surveyors.

E. BROWN AND SON Mathematical inst. makers No. 27 Fulton Slip, New York, make and keep for sale, Theodolities, Levelling inst., Levelling rods, Surveyors Compasses, and Chains, Cases of Mathematical drawing insts. various qualities, together with a general assortment of Ivory Scales and small insts. generally used by Engineers.

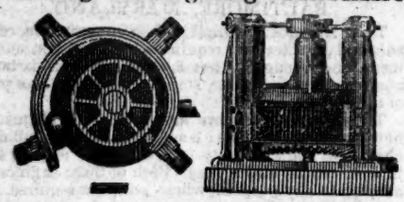
F. S. & S. A. Martine,

IMPORTERS and Jobbers of Railroad Car and Carriage Linings, Curtain materials, Plushes, etc.,
122 William Street,
Ferdin'd S. Martine. N. York. Steph. A. Martine.

3-4 and 6-4 Worsted Damasks, 3-4 and 6-4 Union Damasks, Moreens, Rattinetts, Cloths, Silk and Cotton Velvets, English Buntings, Plushes, etc.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

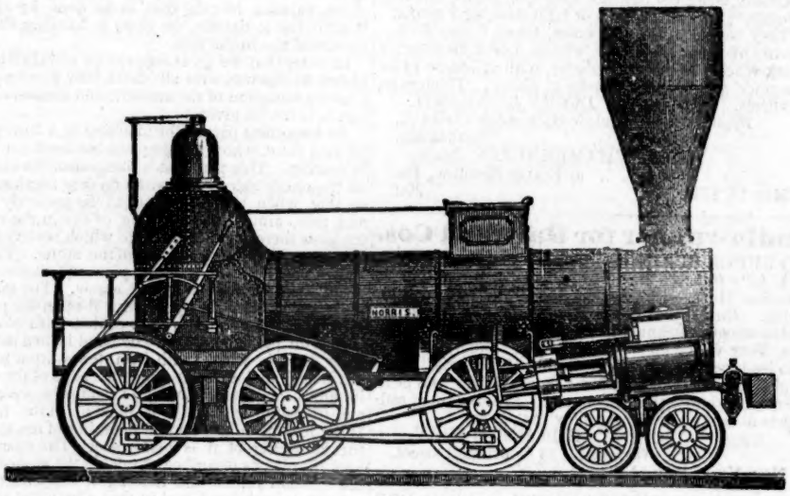
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Rollers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds —including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

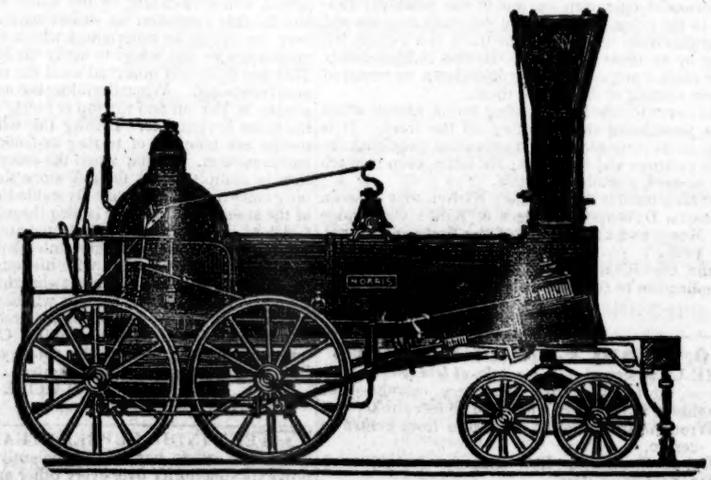
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





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Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

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